



*DELAWARE HEALTH AND SOCIAL SERVICES*

Division of Public Health

Office of Drinking Water

# DRINKING WATER STATE REVOLVING FUND 2008 ANNUAL REPORT

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## **I. Introduction**

The State of Delaware is pleased to submit the Annual Report on the Drinking Water State Revolving Loan Fund (DWSRF) for the State Fiscal Year 2008. The report addresses operation of the DWSRF from July 1, 2007 to June 30, 2008. During that time period Delaware received the capitalization grant award for the federal fiscal year 2006 allotment.

This comprehensive report is provided to the public and to EPA to detail activities undertaken to reach the goals and objectives set forth in the Intended Use Plan (IUP) developed for fiscal year 2008. The report documents the status of the program by describing the process made toward long- and short- term program goals, the sources and uses of all funds, financial status of the DWSRF, and compliance with federal DWSRF requirements.

The report is presented in five sections. Section II provides a summary of long- and short-term goals. Section III details loan and set-aside activities. Section IV provides an overview of the financial conditions of the program. Section V reports compliance with federal capitalization grant agreements and the operating agreement.

### **Delaware DWSRF – Overview SFY 2008**

Total Investments: \$83,564,500 federal, \$16,712,900 state

Number of Projects (Closed Loans): 52

Project Funding (Closed Loans): \$70,433,489

Average Interest Rate: 3.1%

Average Repayment Period: 21.7 years

Small Systems Funded: 38

Disadvantaged Community Loan Funding: 3 for \$2,172,819

## **II. Goals and Accomplishments**

Delaware Health and Social Services (DHSS) developed the goals below for the State Fiscal Year 2008 IUP. The long-term goals provide a framework that guides programmatic management decisions. Short-term goals support the implementation of the program's long-term goals.

### **A. Progress toward Long-Term Goals**

1. Maintain the DWSRF in perpetuity by judicious use and management of the assets by utilizing an adequate rate of return:

- According to the PER and annual audits, DHSS has an adequate rate of return and can continue to maintain the DWSRF in perpetuity.

2. Target resources and funds to address the most significant public health and compliance problems facing the state:

- The Project Priority Criteria is utilized for this purpose.

3. Assist public water systems with achieving affordable compliance and public health protection through DHSS personnel and set-aside contracts:

- Contracts with the Delaware Rural Water Association (DRWA) and Delaware Technical and Community College (DTCC) were reviewed this year to determine effectiveness and to ensure services were being provided per contract language.

- Through the Capacity Development program, a Sustainable Infrastructure Circuit Rider was added to the contract with DRWA. This position has been and will continue to be a valuable instrument in assisting public water systems with financial planning, early detection of public health risks, and better management practices.

### **B. Progress toward Short-Term Goals**

1. Utilize the Capacity Development program to further enhance the technical, financial, and managerial capabilities of public water systems to decrease the number of systems that are out of compliance with SDWA regulations:

#### **Operator Certification**

Office of Drinking Water (ODW) staff identified and contacted all community water systems and non-transient non-community water systems that were out of compliance with current operator certification requirements. Assistance was provided on a per-system basis depending upon individual needs. This includes providing systems with educational opportunities, through DRWA and Del Tech and obtaining contractual services.

### Lead and Copper Rule

This rule poses a compliance issue too many small water systems because of its complexity. ODW has been diligent in communicating with systems to provide technical and managerial guidance to prevent noncompliance.

### New Systems/Owners

ODW ensures that 100 percent of new systems open in compliance with the SDWA.

In the past year, several systems have been sold. ODW works with new owners to provide comprehensive details on water system regulations, compliance history, sampling guidelines, and training opportunities.

### New programs

ODW and DTCC have developed two new pilot programs. The first is a scholarship program for operators. ODW will fund drinking water education for 5 qualified applicants to attend the base level instruction, 2 endorsement courses, and 10 one-day seminars.

- The second is targeted to manufactured housing community owner/operators. Upon owner or decision maker's completion of Management Certificate coursework, employees can obtain free training through Del Tech for one year. In other words, if a very small system (ie: mobile home community) owner gets through the coursework required to obtain the Management Certificate, than any person employed by that owner can get free training for one year.

- Both pilots will begin in 2009.

### 2. Upgrade infrastructure in at least four public water systems in Delaware:

- DHSS closed loans with the Town of Millsboro, Tidewater Utilities, and is in the process of closing a loan with the City of Wilmington.

### 3. Provide safe drinking water in 2007 for 143,750 Delaware residents:

- By closing the 4 loans listed above, 143,750 Delaware residents will benefit from safer drinking water because of infrastructure improvements.

### 4. Continue to work with DNREC, DHSS legal counsel, and DWSRF applicants to reduce pre-application to loan closing time frame by at least one month:

- Parties above have coordinated to close loans in a timely manner. However, there has been some time lapse in financial reviews. DHSS will establish a timeline during the next round of applications that will define expectations of time allotted for loan review and approval for each application.

5. Continue to meet binding commitment requirements:

- DHSS has met binding commitment requirements set forth by EPA Region III.

6. Work with EPA and DWSRF applicants to include more detailed public health benefits statements in federal reports and DWSRF applications:

- DHSS provided detailed health benefits statements and system demographics in reports where applicable.

7. Place a stronger emphasis on public health benefits of infrastructure improvements by revising the DWSRF applications:

- DHSS included language in the pre and full DWSRF applications that require applicants to provide health benefits and community demographics.

8. Meet Program Activity Measures of 82% of fund utilization rate as negotiated with EPA through increased communication and reporting requirements with loan applicants and set-aside recipients:

- DHSS should meet this goal by the end of calendar year 2008. Due to the extended period of time to perform the environmental review for the Wilmington Brandywine Filter project, DHSS was unable to close Phase I of that loan. Therefore, fund utilization is at 81% for this report.

#### Program Activity Measures (PAMs)

Delaware's DWSRF program supports goal 2 of EPA's Strategic Plan which pertains to restoring and maintaining safe and clean water. Objective 1 of goal 2 relates to protecting public health by reducing drinking water contaminants. Objective 2 of goal 2 relates to protecting water quality. For each of these two broad objectives, the Strategic Plan includes numerous PAMs. The PAMs include two types: (1) measures with targets and commitments and (2) measures which are national indicators.

#### 1. Targets and Commitments

- Cumulative dollar amount of loan agreements is \$70,433,489
- Cumulative dollar amount available for projects is \$87,290,954
- Delaware's fund utilization rate for FFY 2008 is 81%

#### 2. Indicators

- Cumulative number of DWSRF projects that have initiated operations: 41 for \$11,973,817. This number has been updated in DWNIMS 2008.
- Number of DWSRF projects that will assist community water systems to return to compliance with drinking water standards:  
0-Communities that were loaned funds were not out of compliance with drinking water standards.

### III. Loan and Set-Aside Activities

This section provides a detailed discussion of the DWSRF assistance activities during SFY 2008. Information presented includes sources of program funding, loan activity status, and status of set-aside activities.

Table 1 and Table 2 provide information about the sources and uses of DWSRF funding. Table 1 shows actual disbursements in SFY 2008. Table 2 shows all sources of DWSRF funds available in SFY 2008. It also shows the binding commitments, workplan commitments, and administrative funding commitments made for the year.

Table 1: Uses of Disbursed DWSRF Funding

<b>Uses of Disbursed Funds</b>	<b>2008(\$)</b>
<i>DWSRF Loan Account</i>	
Standard Loans	
Small Systems	
Standard	2,724,000
Disadvantaged Communities	0
Small System Subtotal:	2,724,000
<b>Subtotal:</b>	2,724,000
<i>Set-Aside Account</i>	
Technical Assistance (2%)	56,218
Administration (4%)	148,942
Fees	
State Program Management (10%)	
Operator Certification	69,516
PWSS	393,926
Underground Injection Control	175,184
Capacity Development	0
<b>State Program Management Subtotal:</b>	638,626
Local Assistance (15%)	
Capacity Development	108,487
Source Water Protection	268,868
<b>Local Assistance Subtotal:</b>	377,355
<b>Subtotal:</b>	1,221,141
<b>Total:</b>	3,945,141

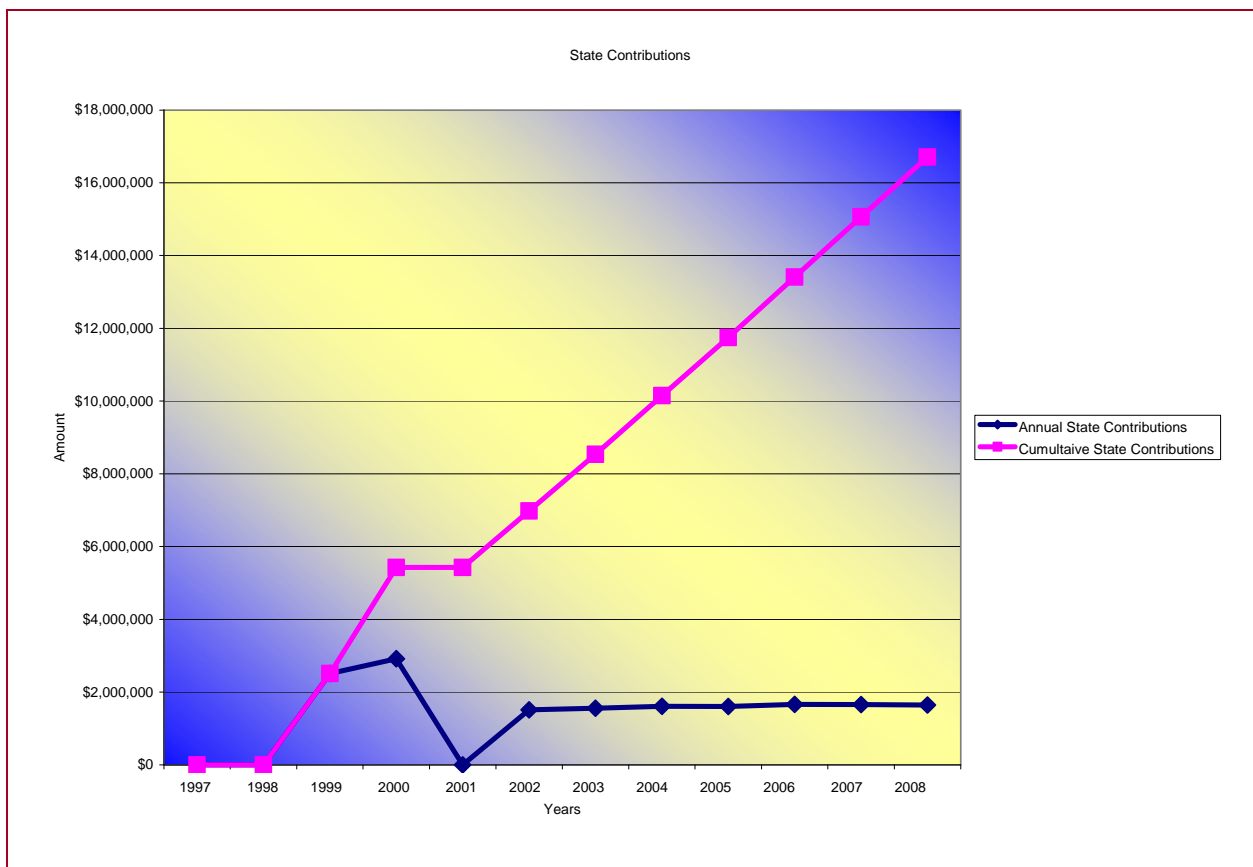
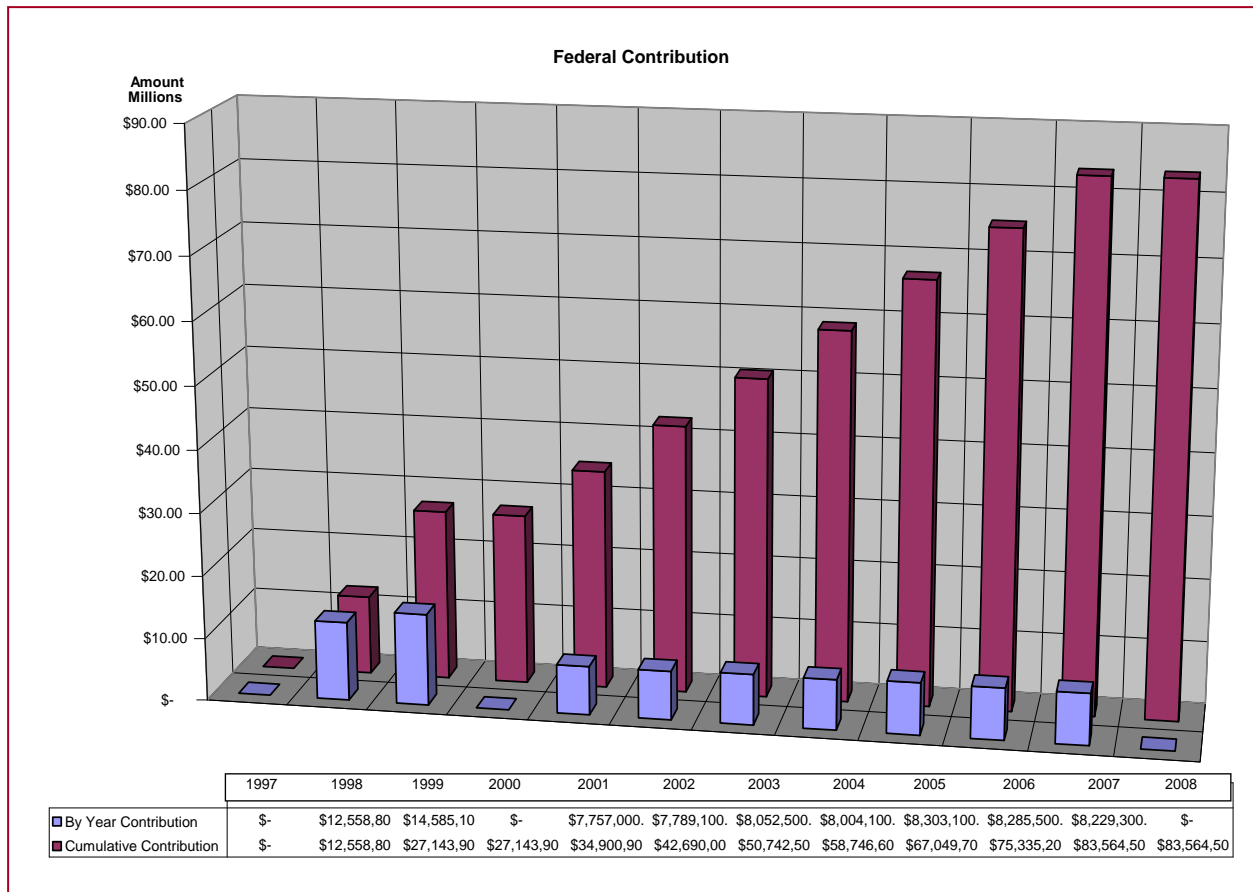


Table 2: Sources and Uses of Committed DWSRF Funding

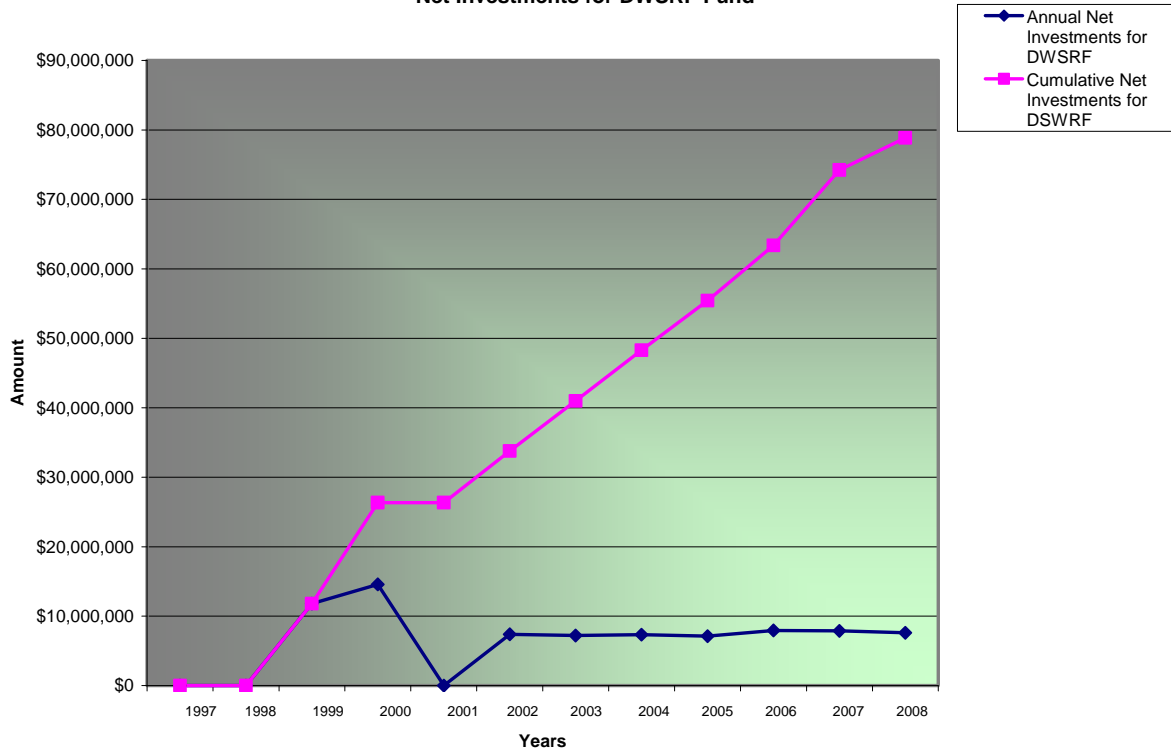
<b>Sources of Funds</b>	<b>2008 (\$)</b>
Capitalization Grant	8,229,300
State Match	1,645,860
Additional State Contributions	0
Investment Interest Earnings	1,337,970
Repayment Principal and Interest Repayments	3,867,430
1% Loan Origination Fee	27,200
Other Sources:	
Unused funds from 2004 PPL	1,415,226
Prior loan funds returned from Artesian Water Co.	319,238
Bond Proceeds	0
Transfers	0
<b>Total</b>	<b>16,842,224</b>

<b>Uses of Committed Funds</b>	<b>2008 (\$)</b>
<i>DWSRF Loan Account Binding Commitments</i>	
Standard Loans	
Small Systems	
Standard	2,724,000
Disadvantaged Communities	0
Small Systems Subtotal:	2,724,000
Committed Loan Subtotal:	2,724,000
Unclosed Loans	11,818,823
<b>Subtotal:</b>	<b>14,542,823</b>
<i>Set-Aside Account Workplan Commitments</i>	
Technical Assistance (2%)	164,586
Administration (4%)	329,172
State Program Management (10%)	
Operator Certification	76,078
PWSS	501,483
Underground Injection Control	245,369
Capacity Development	0
State Program Management Subtotal:	822,930
Local Assistance (15%)	
Capacity Development	567,159
Source Water Protection	388,354
Local Assistance Subtotal:	955,513
<b>Subtotal:</b>	<b>2,272,201</b>
<b>Total:</b>	<b>16,815,024</b>

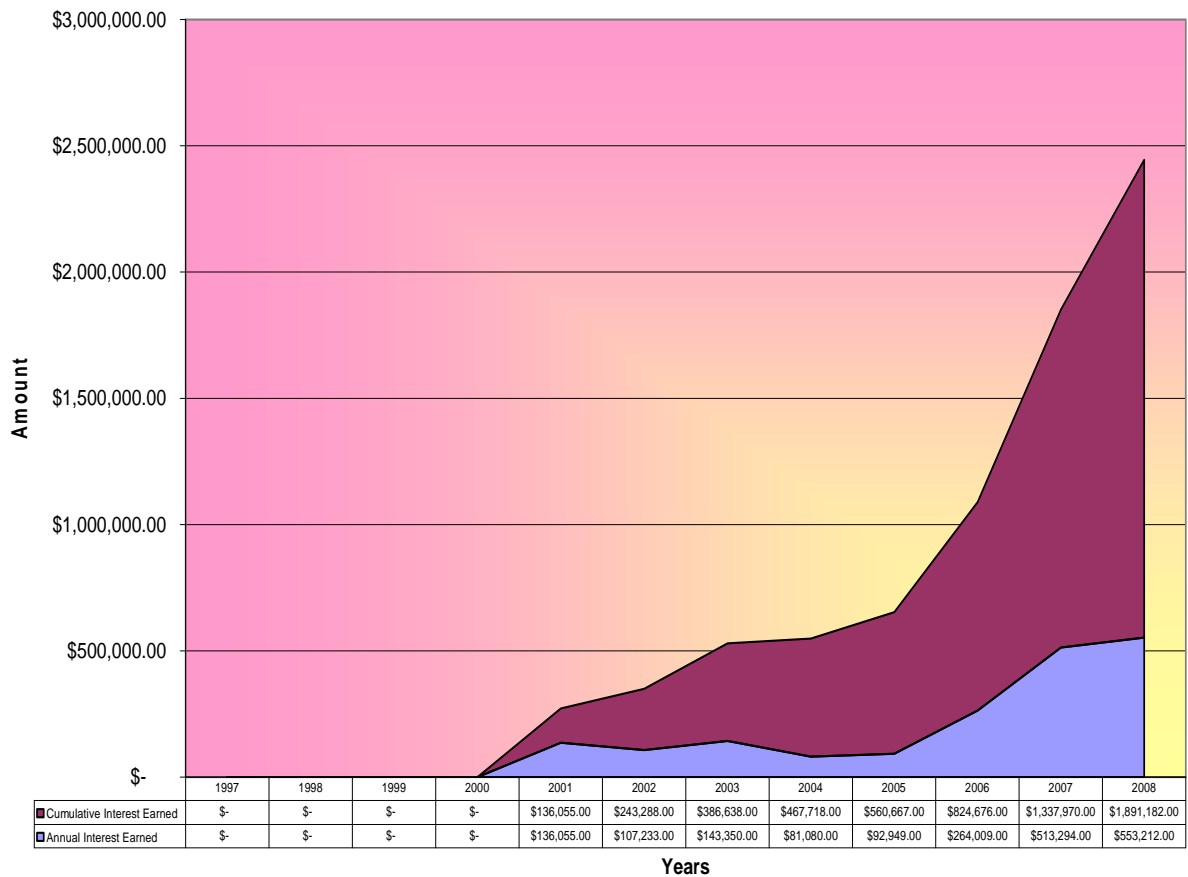
Chart indicates federal and state contributions to the program, net investments, interest earnings on investments, and income from fees.



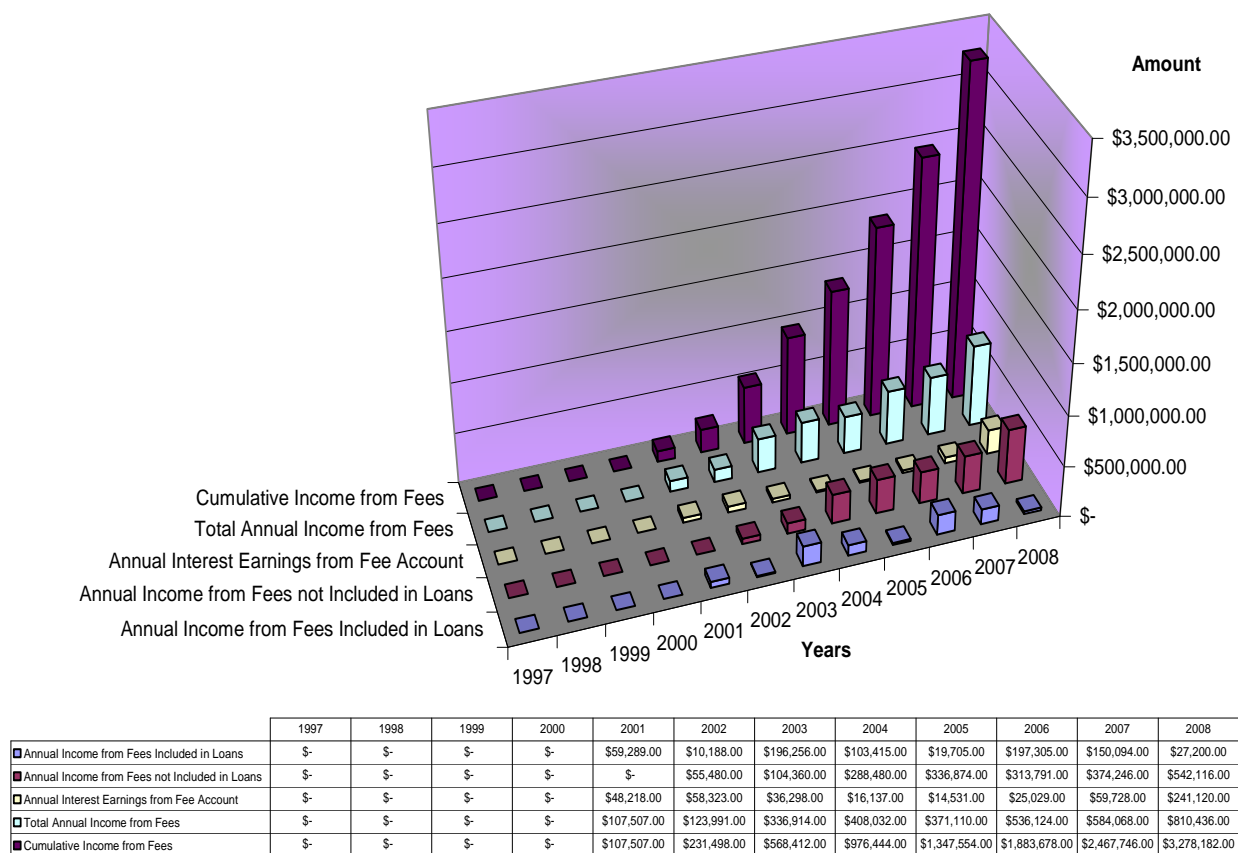
### Net Investments for DWSRF Fund



### Interest Earnings on Investments



### Income from Fees



### **A. Sources of DWSRF Funding**

The funding available for the DWSRF program in this reporting period totaled \$16,842,224. Please refer to Table 1 for more information.

#### **Capitalization Grants**

EPA awarded Delaware \$8,229,300 in 2008.

#### **State Match**

The State of Delaware provided \$1,645,860 as the required 20% state match.

#### **Investment Interest Earnings**

The DWSRF received \$1,337,970 in investment interest earnings.

#### **Repayments**

Repayments during the reporting period totaled \$3,867,430. This includes principal and interest.

#### **Fees**

DHSS charges a 1% administration fee on closed loans. \$27,200 was deposited into that account in 2008.

#### **Other Sources**

DHSS had \$1,415,226 from an elevated tank project from the City of Lewes listed on the 2004 PPL. The City stated in Feb 2008 that they would be unable to start on the tank project and released the money back to the DWSRF. The remainder, \$319,238 of the Artesian Water Company return was another source of funds.

## **B. Uses of DWSRF Funds**

The DWSRF is providing \$14,542,823 in loans to public water systems. Projects and loans detailed below were listed on the 2007 PPLs (see below).

Table 3-2007 Comprehensive PPL

<b>A. Comprehensive List</b>							
<b>Rank</b>	<b>Project Name</b>	<b>PWSID#</b>	<b>System/Applicant</b>	<b>Project Description</b>	<b>Pop.</b>	<b>Project Cost</b>	<b>Partial Funding</b>
1	Wilmington Brandywine Membrane Plant	DE0000663	City of Wilmington	Pilot, design, and installation of MF/UF membrane system and associated support facilities	140,000	\$18,975,000	\$6,834,541
2	Town of Millsboro	DE0000622	Town of Millsboro	Install bigger pump in well 3, Activate well 4, install and activate well 5	2,580	\$1,644,000	\$1,644,000
3	Forest Grove	DE0000960	Tidewater Utilities Inc	new plant, 70K tank, 5K tank, new well	327	\$650,700	\$0
4	Oak Meadows	DE0000271	Tidewater Utilities Inc	Replace distribution system with 6" and 8" mains	411	\$940,000	\$940,000
5	Country Center Girl Scout Camp	DE00A0848	Country Center Girl Scout Camp	replace contaminated well, pump, and storage tank	25	\$25,000	<b>ODW GRANT</b>
6	Town of Henlopen Acres	DE0000251	Town of Henlopen Acres	install generator	334	\$200,860	\$0
7	City of Newark	DE0000630	City of Newark	install booster pumps	36,000	\$665,000	\$0
8	Chimney Hill-TUI	DE00A0530	Tidewater Utilities, Inc.	SUPPLEMENTAL LOAN FROM 2003 PPL. Install 4,500 feet of 12-inch PVC water main, to interconnect 3 TUI districts, and install production well.	759	\$140,000	\$140,000

Table 4-Ready to Proceed 2007 PPL

<b>B. Ready To Proceed</b>							
<b>Rank</b>	<b>Project Name</b>	<b>PWSID#</b>					
1	Wilmington Brandywine Membrane Plant	DE0000663	City of Wilmington	Pilot, design, and installation of MF/UF membrane system and associated support facilities	140,000	\$18,975,000	\$11,818,823
2	Town of Millsboro	DE0000622	Town of Millsboro	Install bigger pump in well 3, Activate well 4, install and activate well 5	2,580	\$1,644,000	\$1,644,000
4	Oak Meadows	DE0000271	Tidewater Utilities Inc	Replace distribution system with 6" and 8" mains	411	\$940,000	\$940,000
8	Chimney Hill-TUI	DE00A0530	Tidewater Utilities, Inc.	SUPPLEMENTAL LOAN FROM 2003 PPL. Install 4,500 feet of 12-inch PVC water main, to interconnect 3 TUI districts, and install production well.	759	\$140,000	\$140,000
Total					143,750	\$21,699,000	\$14,542,823

### Binding Commitments and Loan Status

The DWSRF entered into loan agreements with three public water systems totaling \$2,724,000 in this reporting period. The loans range in size from \$140,000 to \$1,644,000. The loan term for all three loans is 20 years. The water systems receiving these loans serve 1450 people; systems receiving loans range in size from 411 to 2,580 people; therefore all closed loans in 2008 were for small systems. There were no disadvantaged community loans this year.

Binding commitments for all loans were issued in October 2007. All loans were closed in December 2007.

The City of Wilmington and DHSS plan to close one loan using funds from two capitalization grants totaling \$18,975,000 for the Brandywine Filter project and a second \$5M loan for main upgrades by the end of 2008. DHSS had projected that loan closing would occur before the end of the federal fiscal year. Loan closing did not occur because the environmental review process took longer than expected for the Brandywine Plant. It is more economically feasible to close all loans at one time. Once all of the loans are closed, the fund utilization rate for Delaware should increase to well over 85%.

DHSS will consider the Wilmington loans (\$23,975,000) as equivalency projects to comply with federal cross cutters and DBE regulations.

Below are the project benefits description of all loans closed in 2008.

## **Project Benefits Description**

### *Town of Millsboro*

Binding Commitment date: 10/1/07

Loan closing date: 12/21/07

Loan amount: \$1,644,000

100% DWSRF

No involvement with other agencies

#### Public health problems

- In November 2005, the Town discovered that wells #1 and #2 each contained up to 200 ppb trichloroethylene (TCE). The MCL is 5 ppb. People who consume water containing TCE in excess of the MCL could experience health problems with their liver and have an increased risk of getting cancer. The purpose of this project was to replace the contaminated wells with wells drawing water from a deeper aquifer.

However, it was expected that the deep aquifer would produce water that would exceed secondary standards. The project included the installation of an iron removal system for the new wells.

#### Drinking Water Source

- Millsboro's new wells are in the Manokin aquifer. The Town has worked with DNREC to develop a source water protection plan.

#### Expected project benefits

- This project will eliminate TCE from the drinking water.
- No taste or odor problems were documented.
- This project will increase the amount of water produced from 2000 gpm to 2800 gpm.
- Technical capacity will be increased with the replacement of contaminated wells, treatment, and associated equipment.
- System security will be enhanced with the addition of lighting and new fencing for the facility.
- Fire protection will not be enhanced with this project.

#### Project scope

- New treatment units include a new treatment plant, iron removal equipment, and 2 wells.

#### Demographics

- Current population: 2360
- % under 5 years old: 6.5
- % over 65 years old: 26.6
- Median household income: \$27,379
- County median household income: \$39,208

**Project Benefits Description**  
*Tidewater Utilities Inc. (TUI)*  
*Oak Meadows*

Binding Commitment date: 10/5/07

Loan closing date: 12/21/07

Loan amount: \$940,000

100% DWSRF

No involvement with other agencies

Public health problems

- The existing distribution system consisted of a 4" PVC pipe with glued fittings. The pipe was buried 18" below grade. Due to the shallow pipe depths, the pipes were highly susceptible to freezing which causes main breaks, disruption to service, and possible contamination.
- This project scope called for TUI to install a new distribution system that consisted of 6" and 8" PVC. The system was installed 42" below grade and included gate valves and blow-offs.
- The increased main size also provided fire protection, which was not available due to the small size of the distribution system piping.

Drinking Water Source

- Oak Meadows receives its water from the Columbia aquifer. TUI has worked with DNREC to develop a source water protection plan.

Expected project benefits

- This project will decrease health risks by lowering the chance of bacteriological and chemical contamination due to leaks and/or back pressure.
- No taste or odor problems were documented.
- Technical capacity will be increased with the replacement of undersized water distribution mains.
- Fire protection was enhanced with this project.

Project scope

- Replacement of 4" mains with 6" and 8" mains.

Demographics

- Current population: 411
- County median household income: \$39,208
- Note: Oak Meadows community information not available on census.



## **Project Benefits Description**

*Tidewater Utilities Inc  
Chimney Hill Supplemental*

Binding Commitment date: 10/5/07

Loan closing date: 12/21/07

Loan amount: \$140,000

100% DWSRF

No involvement with other agencies

### Project scope

- This was a supplemental loan for a multi-system interconnection.

### Demographics

- Current population: 411
- County median household income: \$39,208
- Note: Chimney Hill community information not available on census.

**Project Bypass**

Four projects were bypassed on this PPL.

**Forest Grove \$650,700:**

Forest Grove is served by Tidewater Utilities Inc. As part of the review process, the Cabinet Committee for State Planning Issues must ensure that DWSRF projects comply with the state's comprehensive growth plan. On 3/2/07, it was determined by the committee that this project should not be funded.

**Country Center Girl Scout Camp \$25,000:**

The Camp used a state grant instead of a DWSRF loan.

**Town of Henlopen Acres \$200,860:**

The Town withdrew the generator project on 1/3/07.

**City of Newark \$665,000:**

The City withdrew the booster pump project on 12/8/06.

**Disbursements**

DHSS disbursed \$13,240,903 in this reporting period. Please refer to the PAMs section above for the fund utilization rate.

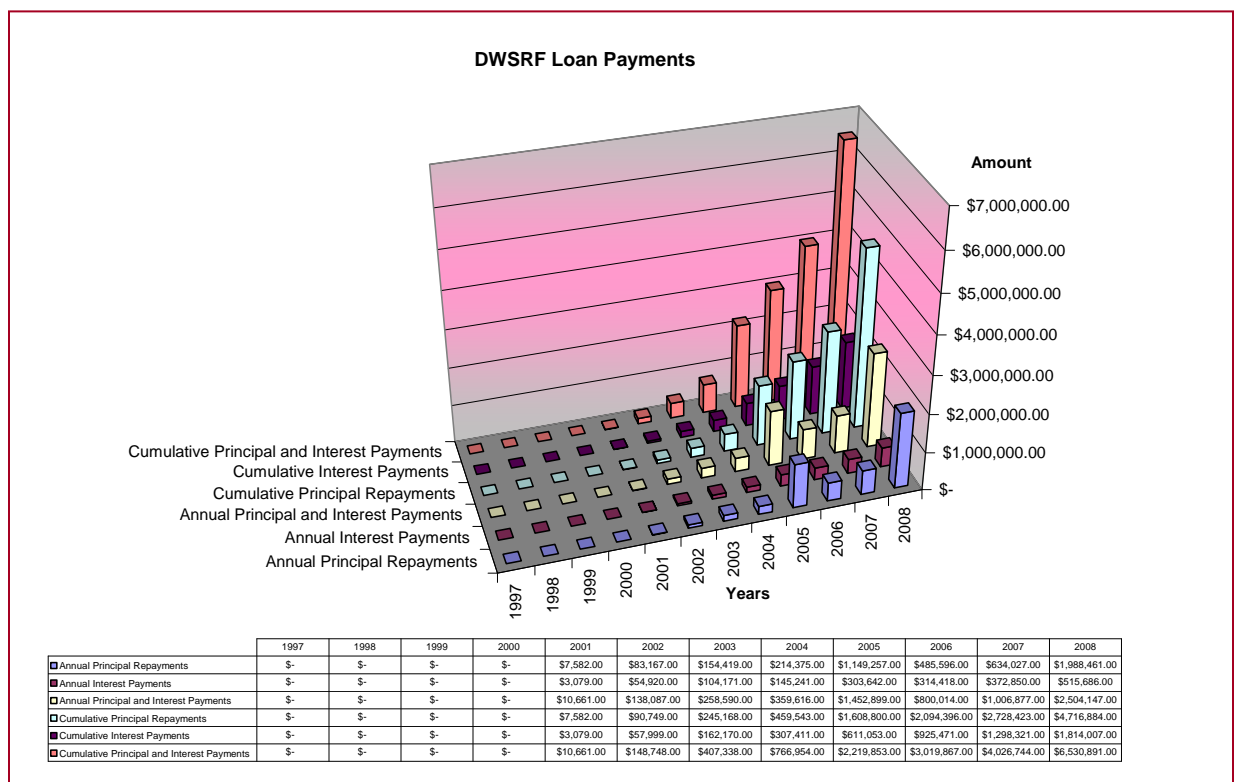
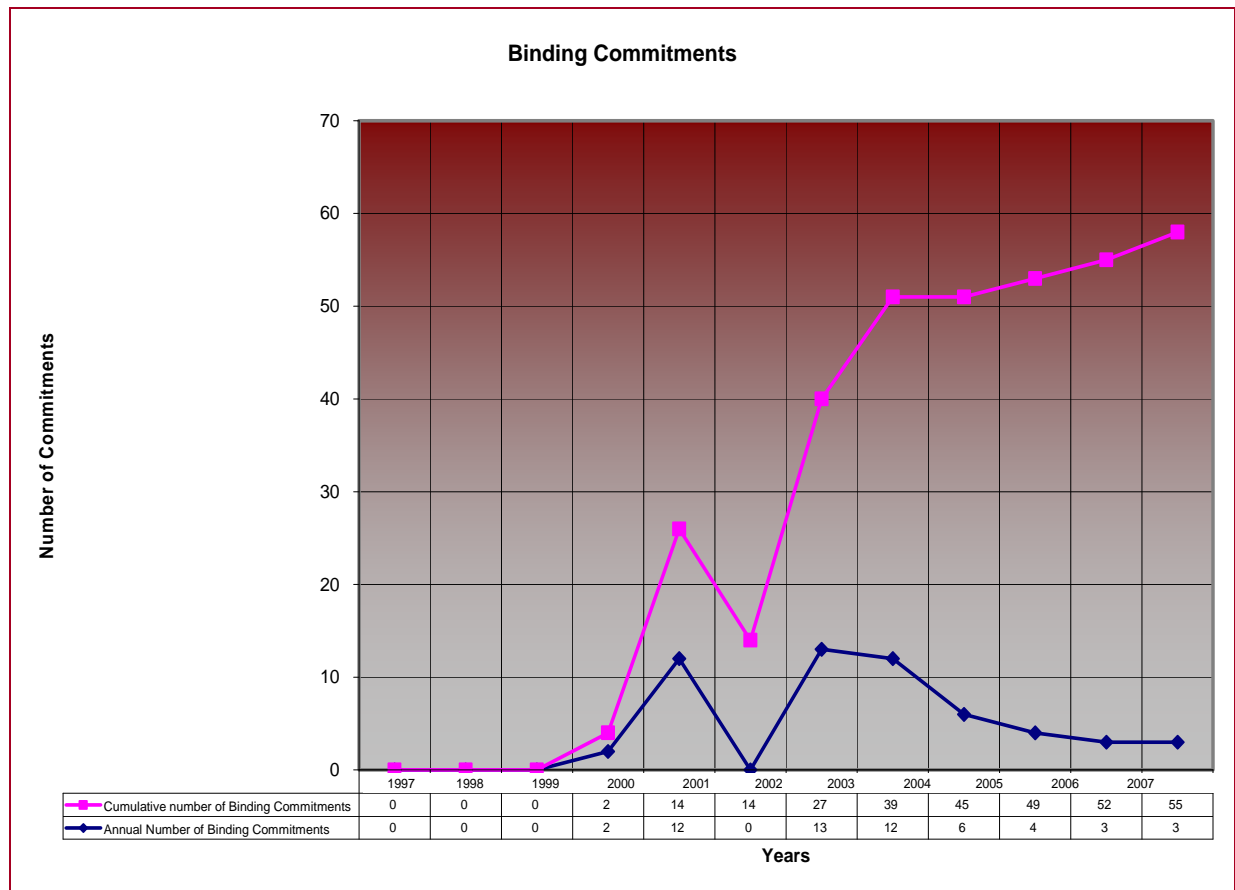
**Marketing to Small, Disadvantaged, or Noncompliant Systems**

DHSS contracts with DRWA for DWSRF applicant assistance. DRWA employs a DWSRF circuit rider who is responsible for assisting all applicants with completing applications and meeting capacity development requirements.

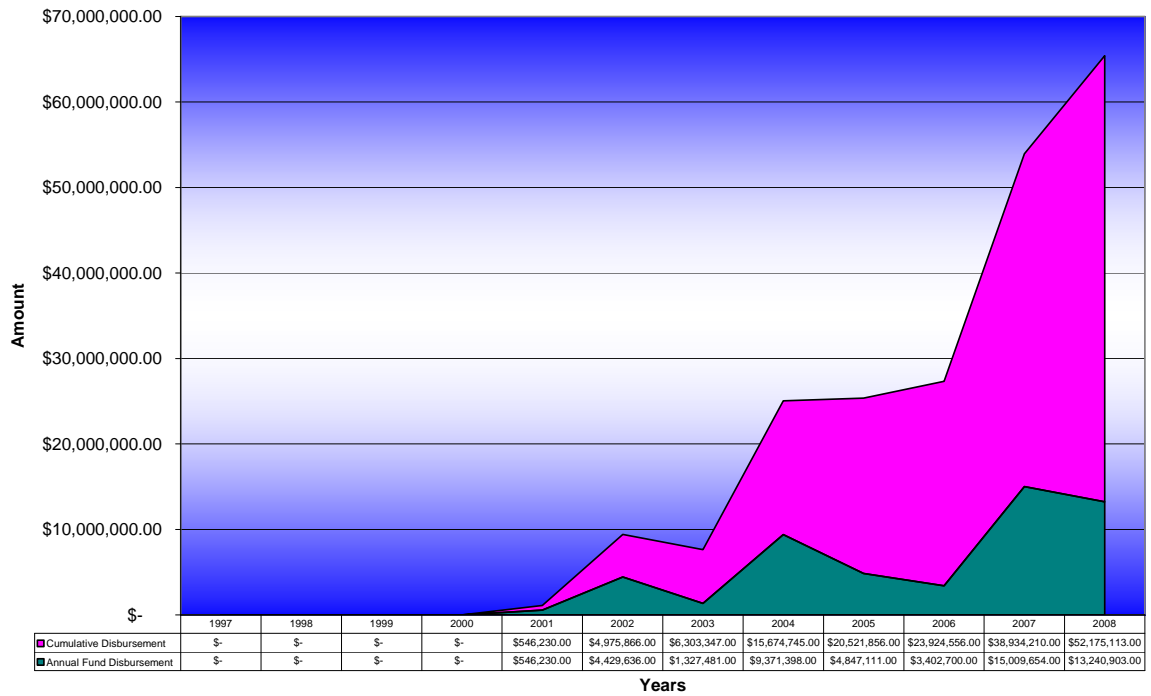
DHSS engineers work with systems through plan review, site visits, and monthly progress meetings to manage project planning, design, and construction.

Once the facility is completed, the DHSS capacity development program works individually with systems to ensure continued compliance with SDWA regulations.

The following charts represent information regarding binding commitments, loan payments, fund disbursement, and assistance provided.

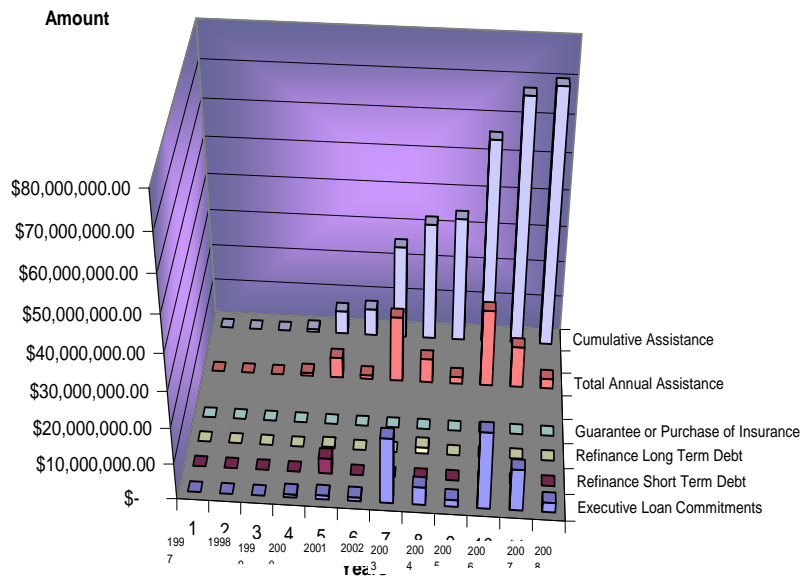


### DWSRF Fund Disbursements



2003  
A

### Assistance Provided



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Executive Loan Commitments	\$-	\$-	\$-	\$820,000.00	\$1,071,242.00	\$1,054,800.00	\$18,326,125.00	\$5,042,631.00	\$1,940,843.00	\$21,503,841.00	\$11,583,501.00
Refinance Short Term Debt	\$-	\$-	\$-	\$-	\$4,307,144.00	\$-	\$-	\$-	\$-	\$-	\$-
Refinance Long Term Debt	\$-	\$-	\$-	\$-	\$366,521.00	\$-	\$-	\$1,692,841.00	\$-	\$-	\$-
Guarantee or Purchase of Insurance	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-
Total Annual Assistance	\$-	\$-	\$-	\$820,000.00	\$5,744,907.00	\$1,054,800.00	\$18,326,125.00	\$6,735,472.00	\$1,940,843.00	\$21,503,841.00	\$11,583,501.00
Cumulative Assistance	\$-	\$-	\$-	\$820,000.00	\$6,564,907.00	\$7,619,707.00	\$25,945,832.00	\$32,681,304.00	\$34,622,147.00	\$56,125,988.00	\$67,709,489.00

## 2008 Projects

### 2008 Projects

DHSS is pleased to report that 10 projects totaling over \$18.8M are under review for funding. DHSS negotiated with EPA to use the 1% origination fee account to meet the 20% match requirements in addition to funds provided by the state.

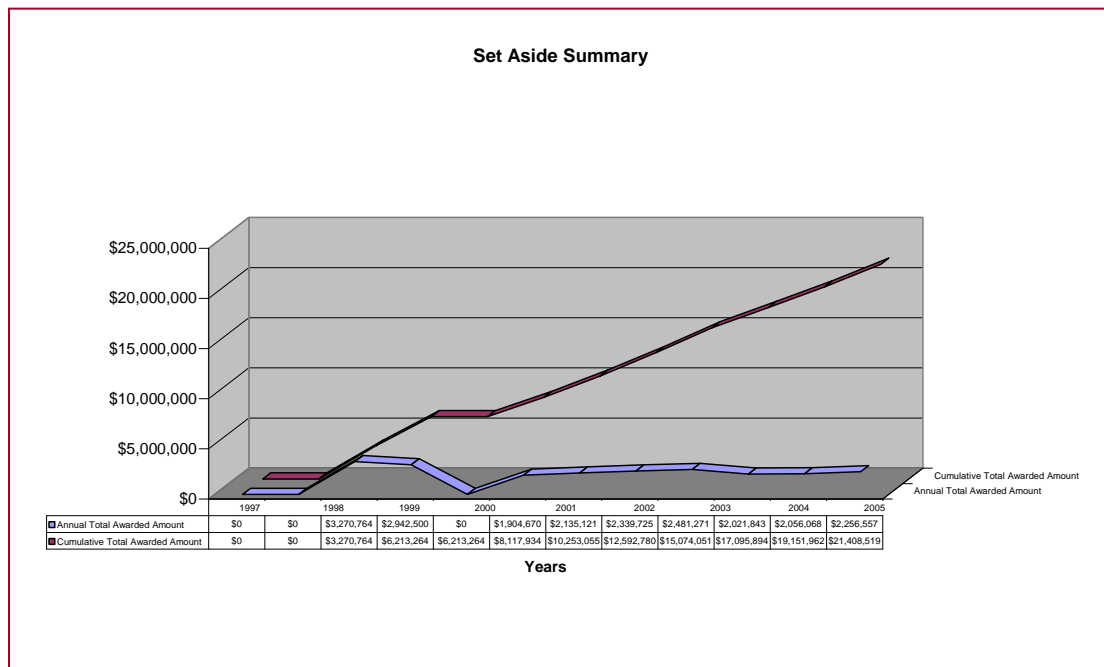
DHSS submitted the capitalization grant application for the 2007 and 2008 federal allotments. This will allow the DWSRF program to 'catch up' with the allotments, therefore avoiding possible fund rescission. It also allows more projects to receive loan assistance.

The Town of Laurel will qualify as a disadvantaged community. EPA has already been presented with the loan terms. The loan amount is \$2.5M.

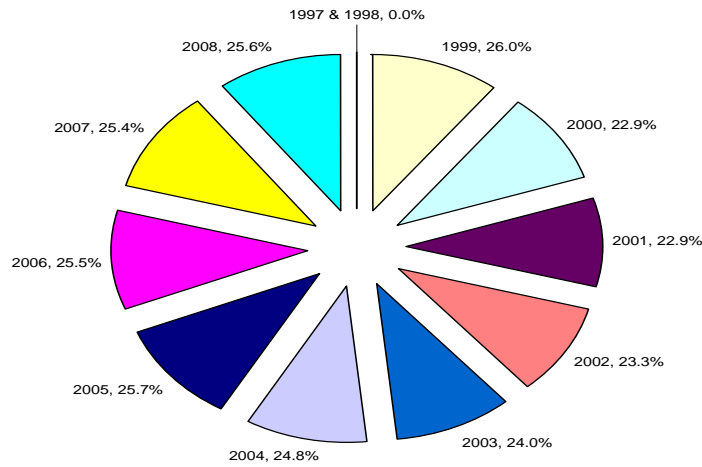
The Project Priority List and scoring criteria are attached.

### Set-Aside Activity Status

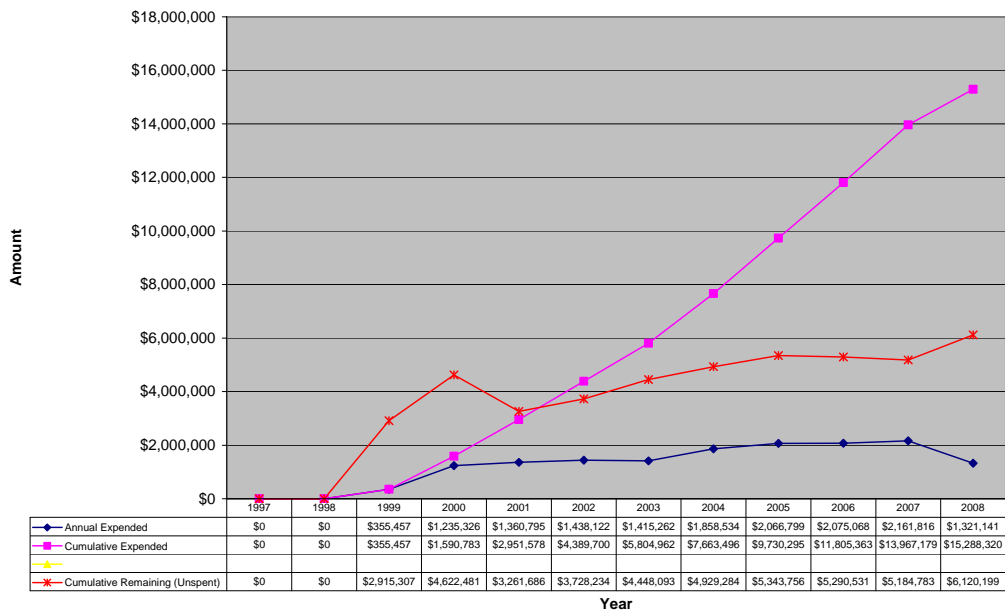
The following pages provide an overview of set-aside activities for 2008. DHSS submitted progress reports on each set-aside on February and August 15. Please refer to those reports for more details. Information is illustrated in the graphs and charts below with narrative to follow.



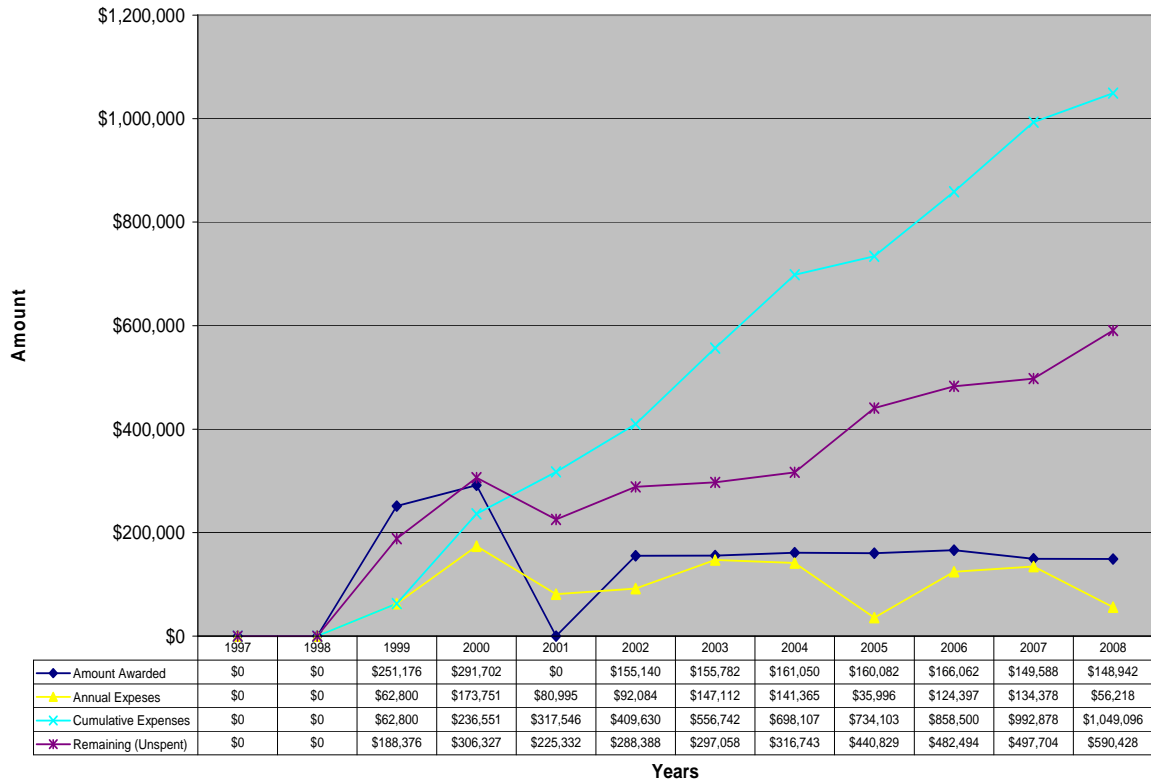
**Cumulative Awarded as a % of the Grant**



**Set-A-Side Expended**

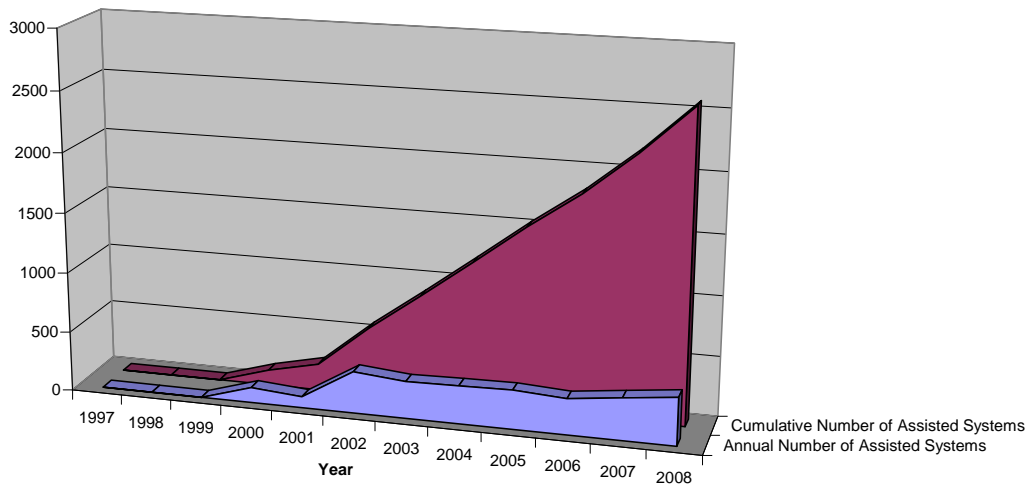


### 2% Set Aside



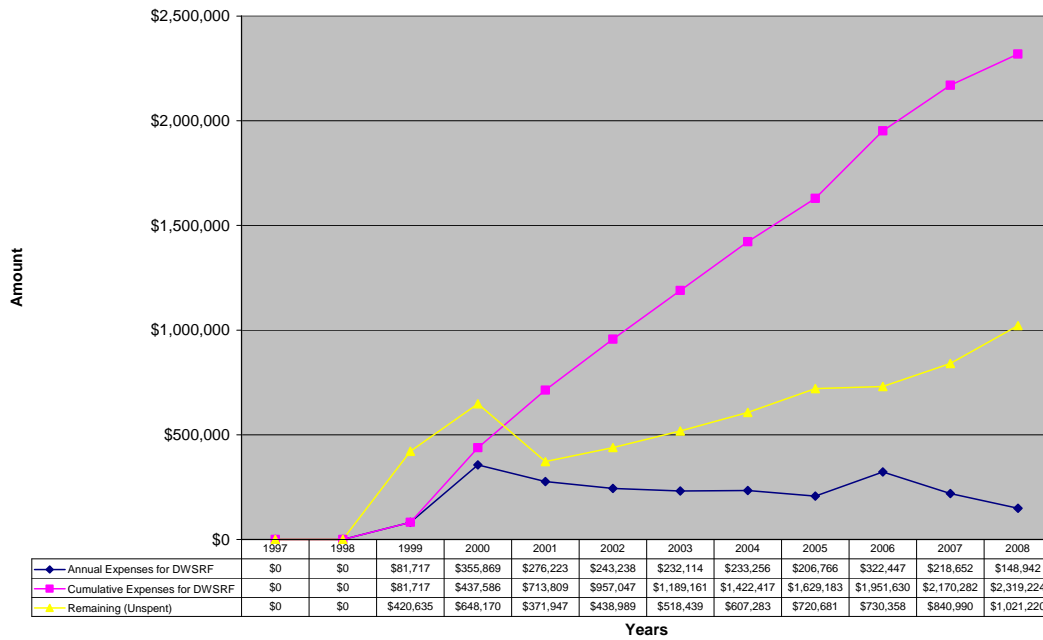
Amount

### 2% Set Aside : Assisted Systems

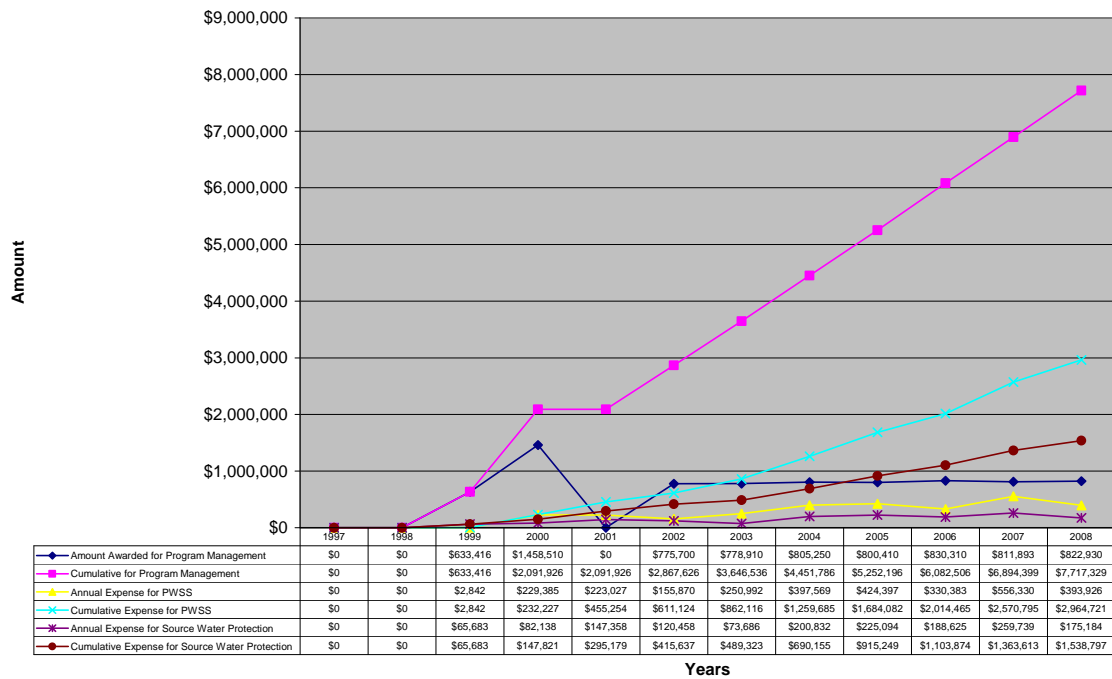


	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Annual Number of Assisted Systems	0	0	0	127	94	348	310	318	325	300	350	400
Cumulative Number of Assisted Systems	0	0	0	127	221	569	879	1197	1522	1822	2172	2572

#### 4% Set Aside

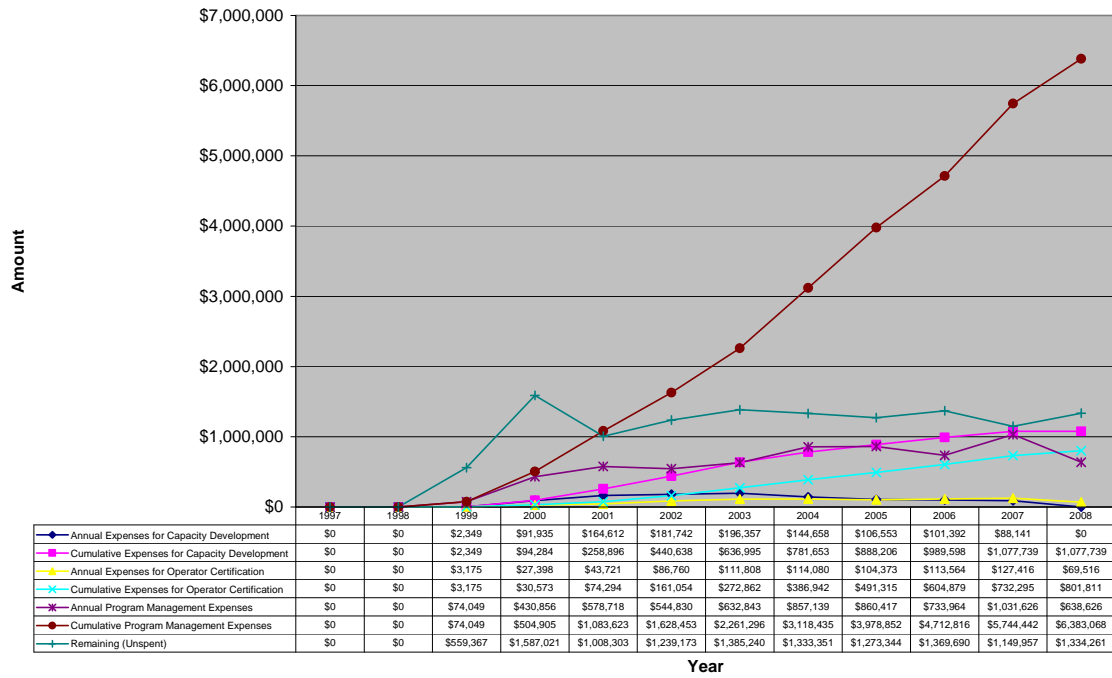


#### 10% of Set Aside (Part 1)

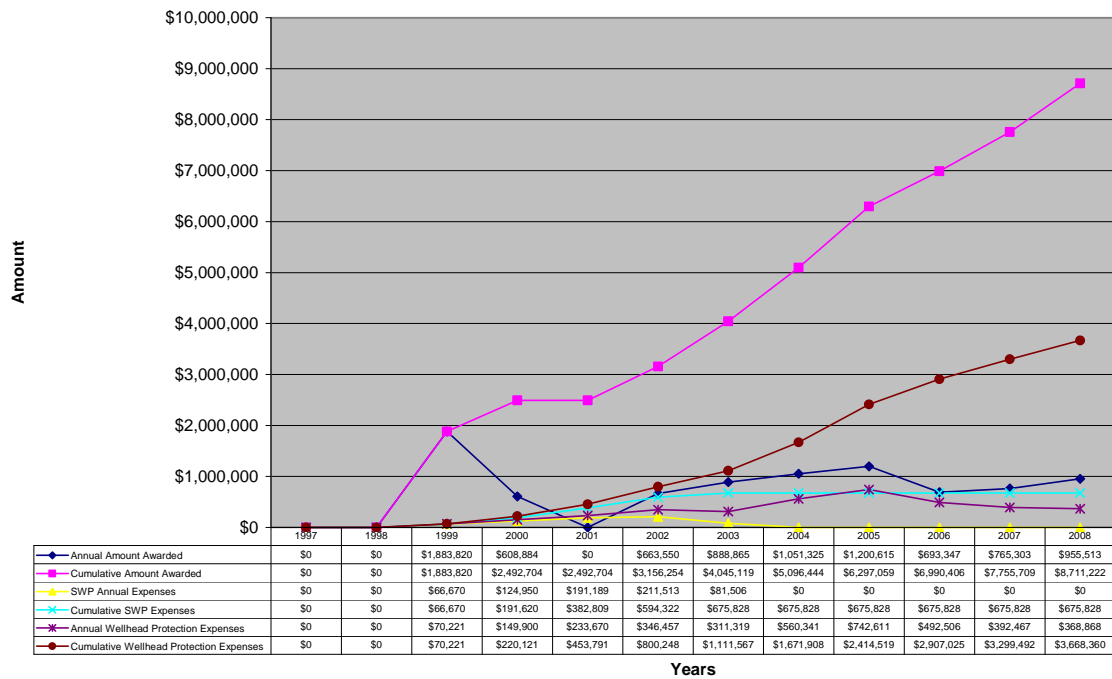


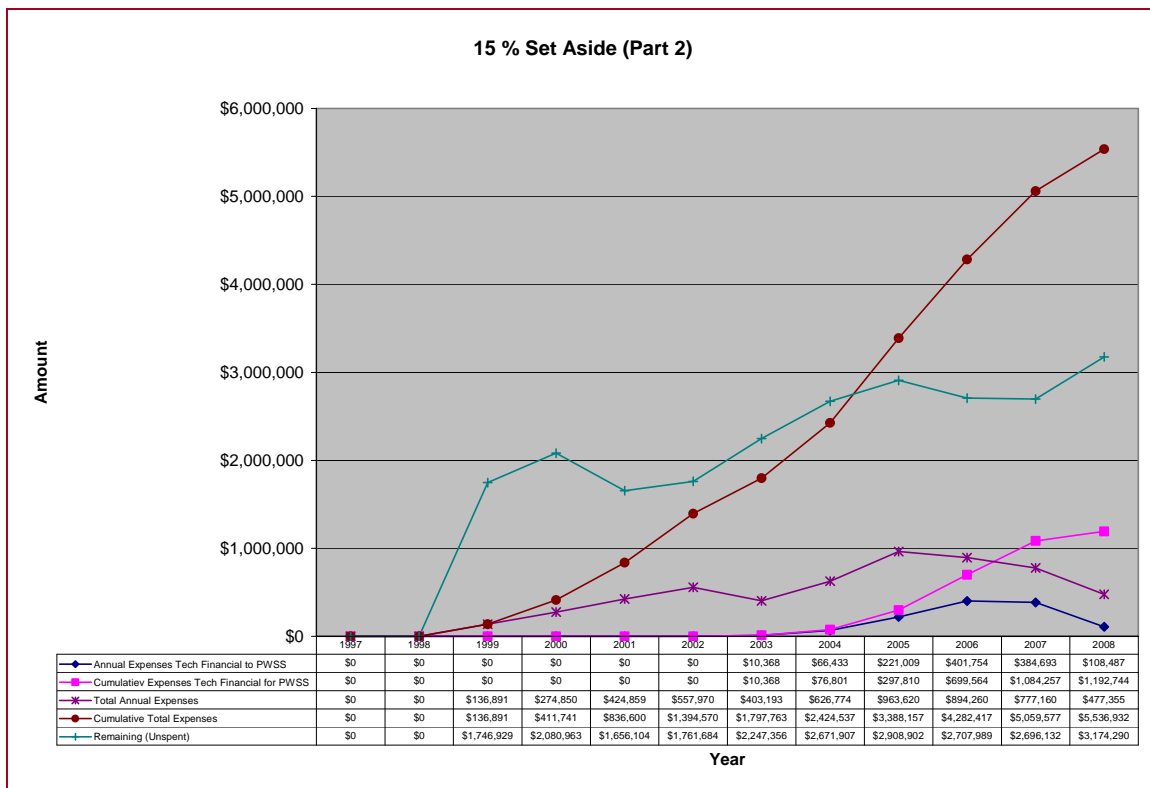


### 10% Set Aside (Part 2)



### 15% Set Aside (Part 1)





## 2% Technical Assistance

Actual Expenditures: \$56,218

### Relationship to On-Going Program

The Delaware Rural Water Association (DRWA) and the Environmental Training Center at Delaware Tech and Community College (DTCC) respectively remain the sole providers of on-site technical assistance and operator certification education.

### Progress Made To-Date

DRWA has provided on-site technical assistance to over 70 individual small water system owner/operators and 30 municipalities annually for the past several years. DTCC has educated over 375 water system operators annually for the past several years. Some of the courses offered were: Troubleshooting Pumps, Well Construction Techniques, and Capital Improvement Planning & Long Term Water & Sewer Capacity. At least 85% of Delaware's community water systems and non-transient, non-community water systems attended training sessions.

### Objectives/Outputs

- Educate at least 355 drinking water operators for continued compliance with "The State of Delaware Regulations for the Licensing and Registration of Operators of Public Water Systems."
- Provide technical assistance to at least 100 small drinking water systems.
- At least 110 small systems can obtain technical assistance free of charge for routine and emergency situations.

#### Outcomes/Benefits

- At least 350 drinking water operators will operate their systems according to federal and state regulations.
- At least 100 small systems will receive on-site technical or emergency assistance.

#### Actual Accomplishments:

- DTCC exceeded their goal of providing training to 350 water system operators.
- DRWA did not meet their goal. They provided on-site technical assistance to approximately 75 small systems.

#### **4% Program Administration**

Actual Expenditures: \$148,942

#### Relationship to On-Going Program

The Office of Drinking Water (ODW), a Division of Public Health, Delaware Health and Social Services and the Accounting Section of Department of Natural Resources and Environmental Control (DNREC) administer the DWSRF program. DNREC provides financial reviews and loan maintenance and ODW provides all other services.

#### Progress Made To-Date

The DWSRF has closed over 48 loans to date.

#### Objectives/Outputs

- Fund positions that provide expertise in varied fields so that the DWSRF program can comply with the SDWA.
- The city of Wilmington, the town of Millsboro, and the communities of Oak Meadows and Chimney Hill will receive funding for drinking water infrastructure improvements.

#### Outcomes/Benefits

- Administer the DWSRF program in a manner that promotes longevity, financial soundness, and effective management while ensuring public health for the State of Delaware.

#### Actual Accomplishments:

- Since May 2008, the Fiscal Management Analyst position for ODW has been vacant. This has made the reporting and grant application processes extremely difficult. As of the end of the reporting period, the position has not been filled.
- DHSS did not meet the goal of closing 4 loans this year. Please see Wilmington loan status above for more details. All other loans were closed.
- Fund utilization is at 81%. This falls short of the 82% goal.

## **10% State Program Management**

Actual Expenditures: \$638,626

*As noted in the FFY 2006 Allocation Work Plan Highlights, the Capacity Development program was funded from the 15% Set-Aside.*

### **1. Operator Certification**

#### *Relationship to On-Going Program*

The Operator Certification program ensures that operators of Delaware's public water systems are properly trained and therefore able to operate their water systems in compliance with the SDWA.

#### *Progress Made To-Date*

There are currently 580 active licensed operators.

#### *Objectives/Outputs*

- Monitor operator licenses and continuing education credits.
- Provide timely and effective communication to operators.
- Renew licenses every two years as they expire and renewal applications are submitted.
- Perform 3 communication actions such as: participating in state-wide conferences, and alerting operators about educational opportunities through the ODW newsletter.

#### *Outcomes/Benefits*

- 55% of Delaware's operators will be well trained and able to maintain their systems in compliance with the SDWA.

### **2. Public Water Supply Supervision**

#### *Relationship to On-Going Program*

Set-aside funds are used to supplement the PWSS program in carrying out activities including: enforcement of SDWA regulations, data management, laboratory certification, and compliance assistance.

#### *Progress Made To-Date*

Historically, the PWSS program has helped approximately 90% of Delaware's public water systems maintain compliance with SDWA regulations. PWSS works in cooperation with Capacity Development – existing systems-- to encourage compliance with the remaining 10%.

#### *Objectives/Outputs*

- Meet grant conditions concerning data management/SDWIS
- Administer the program according to SDWA.
- Assist approximately 511 public water systems in sampling protocol, collection, and schedules.
- 100% of the grant conditions will be met, therefore rescinding previously mandated fund withholdings.
- Supervise public water systems so that at least 75% of public water systems produce drinking water that meets all state and federal regulations.

- Perform 102 sanitary surveys.
- Perform 20 compliance assistance visits.

#### *Outcomes/Benefits*

- Decrease public health risks for approximately 80% of Delaware's population.
- Decrease the number of SDWA violations issued to water systems by 5%.

### 3. Underground Injection Control (UIC)

#### Relationship to On-Going Program

The Underground Injection Control program continues to be administered by DNREC. This regulatory program controls real and potential sources of ground water contamination.

#### Progress Made To-Date

This program has efficiently monitored on-site wastewater treatment and disposal systems, Class V injection wells, and large on-site wastewater treatment and disposal system's (OWTDS's). To reduce pollutant loads to the ground water from large OWTDS's the UIC program has implemented a policy requiring all new large OWTDS's to reduce the nitrogen concentration in their discharge to 10 mg/l.

UIC staff has also participated in the development of the Pollution Control Strategy for the Inland Bays Basin. Public Hearings on the Pollution Control Strategy will be conducted in June, 2007.

#### Objectives/Outputs

- Review at least 50 on-site wastewater treatment and disposal system permit applications.
- Perform at least 175 inspections of large on-site wastewater treatment and disposal systems.
- Continue revisions to regulations.
- Perform at least 350 Class V injection well inspections.
- Complete database upgrades.

#### Outcomes/Benefits

- Groundwater contamination will decrease by at least 12%.
- Public will gain knowledge of pollution prevention or pollution reduction opportunities through 3 educational events.

#### Actual Accomplishments

##### 1. Operator Certification

- 43 new licenses were issued.

##### 2. PWSS

- The PWSS program has been concentrating on one small water system that has exceeded the nitrate, iron, and (currently) manganese MCLs at some point in the recent past. Staff has been monitoring the system daily with visits, sampling, and reporting.

- The PWSS program is still working with SAIC and EPA to resolve data verification issues.
- As of February 2008, the PWSS program is fully staffed.
- PWSS has developed a 'road map' and is in contract negotiations with SAIC to resolve data verification issues, prepare for SWRL 1, and to create a QA/QC tool to ensure the quality of data inputted into SDWIS. The 'road map' was delivered to EPA during the EPA/DHSS meeting on July 30, 2008.
- 37 sanitary surveys were completed for this reporting period, data verification improvements are progressing.
- 12 compliance assistance visits were reported, in addition to the special case reported in the 'Accomplishments.'
- Staff has been assisting systems with Stage 2 DBPR sampling plans.

### 3. UIC

- UIC staff is currently inspecting and inventorying all Water Treatment Facilities (WTF) that generate a brine discharge. Any WTF that is found to discharge brine through subsurface injection will be required to either obtain a permit/authorization to continue the discharge, or to eliminate the discharge if UIC staff determines that the activity will cause a violation of drinking water standards. UIC staff is coordinating this project with ODW. ODW staff will revise their application to construct and operate a WTF to require the applicant to include documentation from the UIC Program Manager stating the WTF has received UIC approval to discharge the brine. A Memorandum of Agreement is being drafted to document this cooperative effort.
- 8 construction permit applications were received, and 7 construction permits were issued during the time period, 6 new operating permits were issued, 7 existing operating permits were reissued.
- A total of 257 inspections were performed. 193 inspections were performed on large on-site wastewater treatment and disposal systems.
- Due to the complicated process of approvals, workshops, public comment, peer reviews, agencies reviews, and public hearings, the revisions to the UIC regulations are expected to take three years to complete. UIC staff is keeping EPA abreast of progress made in revising Delaware's UIC regulations through the mid-year and end-of-year reports. Draft UIC regulations have been completed, and are undergoing internal review within DNREC. UIC staff expects to conduct workshops on the draft UIC regulations in FY 2009.
- 211 Class V Injection wells were inspected.
- Delaware is currently working with the EPA to develop and implement a network exchange program to flow Delaware's UIC data to the EPA. Delaware staff is participating as part of the Integrated Project Team. EPA has projected the completion of the XML Schema by September, 2007. The goal is to test the database in FY 2008, and deploy the data base in 2009. Simultaneously, Delaware's in-house UIC data base is also being updated to incorporate all of the new fields required by the network exchange program. Updating Delaware's in-house data base is an important component of the network exchange program. This will allow

staff to graph trends, review monitoring data in various forms, and perform queries more efficiently. There are concerns that there may not be sufficient in-house funds to complete the internal database upgrades. Upgrades of the Delaware data base are expected to be completed in FY 2009.

### **15% Local Assistance/Other Programs**

Actual Expenditures: \$955,513

#### **1. Capacity Development \$567,159**

##### **A. Capacity Development (new systems)**

###### *Relationship to On-Going Program*

This portion of the Capacity Development program assists new drinking water system owner/operators and DWSRF applicants in building technical, financial, and managerial capacity.

###### *Progress Made To-Date*

All new and newly discovered drinking water systems that will be regulated by the Office of Drinking water have been given technical, financial, and managerial assistance through this program. This assistance helps ensure that the water system can open and/or maintain compliance with SDWA regulations.

Since the initiation of the Capacity Development program, all DWSRF loan applicants have been given assistance based on the needs of their individual water systems. Assistance has included: financial training for municipal decision makers, and operator training for surface water systems.

###### *Objectives/Outputs*

- All new drinking water systems will be assisted by ODW staff to ensure that before the water is available for consumption, the water system owner/operator has demonstrated technical, managerial, and financial capacity.
- 4 DWSRF loan applicants will receive individual assistance based on their needs as listed in the Capacity Development section of the DWSRF application.

###### *Objectives/Benefits*

- 100% of new water systems will open in compliance with the SDWA.
- 100% of DWSRF applicants will receive assistance as needed.

##### **B. Capacity Development (existing systems)**

###### *Relationship to On-Going Program*

This portion of Capacity Development assists existing water systems with maintaining technical, managerial, and financial capacity.

###### *Progress Made To-Date*

During the past few years, in addition to working closely with the historical SNC list, Capacity Development has focused on the Lead and Cooper program. Much time has been devoted to corresponding and assisting over 250 water systems to maintain compliance with this complex rule. Capacity Development has also devoted efforts to ensure that community and non transient non community water systems maintain certified water operators.

#### Future Plans

In the future, this program will work with systems to:

- Comply with the upcoming Ground Water Rule and Stage 2 Disinfection Byproduct Rule by: providing training opportunities, developing sampling plans, and helping systems prepare for sanitary surveys.
- Utilize services provided by DRWA and DTCC to maintain operator license requirements.
- Develop and implement small water system infrastructure sustainability programs.

#### Objectives/Outputs

- Closely monitor 12 historical SNCs.
- 100% of the historical SNCs will be offered assistance.
- Determine training needs and facilitate 3 state-wide training events using DRWA's mobile training unit.
- Provide assistance to approximately 250 small water systems on an individual basis.

## 2. Source Water Protection \$388,354

#### Relationship to On-Going program

The Wellhead Protection Plan (WHPP) and Source Water Assessment and Protection (SWAPP) programs continue to be instrumental in providing source water data and research to the PWSS program.

#### Progress Made To-Date

EPA approved the Delaware Wellhead Protection Plan (WHPP) in 1990 and the Delaware Source Water Assessment Plan (SWAP) in 1999. These two documents describe the program elements and the approaches that were taken in Delaware to assess and protect the sources of public drinking water. This includes ground-water and surface-water dependent systems. Completion of the tasks described in both the WHPP and the SWAPP provide State, local governments, public water system owners, and the public with the tools to protect the quality and the quantity of their sources of drinking water. This portion of the 15% set-aside will continue to be used to fund staff and contractual services necessary to complete and augment the assessment and protection work. Past activities include:

- Source water assessment, characterization, and monitoring.
- Prioritization of state source water protection activities.
- Integration of SWAPP with other local, state, and federal programs.
- Motivation of local source water protection activities.



- Information management.
- Update source water assessments.
- Modify and maintain existing databases including web-based information.
- Continue Sussex County Ground Water Availability project.
- Streamline communication between ODW and DNREC.
- Inspect petroleum tank facilities.
- Continue coordination between local, state, and federal programs.

#### Outputs/Objectives

- Track baseline and post-baseline source water assessments.
- Identify the most threatening potential sources of source water contamination.
- Produce final reports for Kent and Sussex counties ground water conditions and hydrogeological framework.
- Identify priority underground storage tanks through inspections.
- Identify levels of assistance needed to local governments regarding local source water protection activities.
- Input and maintain current and reliable information in various databases.

#### Outcomes/Benefits

- Real and potential contaminants in sources of at least 50% of public drinking water systems will be monitored, therefore decreasing public health risks.
- 5 local governments will be better equipped to identify hazards to drinking water sources.
- At least 1000 consumers will be more educated about the importance of protecting source water.

#### Actual Accomplishments:

##### 1. Capacity Development

- 4 new systems opened in compliance with SDWA regulations.
- 100% of DWSRF loan applicants have been offered assistance.
- GWR and Stage 2 DBPR training have been offered to staff and operators.
- Per ODW request, DRWA is focusing on assisting small systems with O&M manuals, cross connection control plans, and emergency response plans.
- ODW contracted with DRWA to provide sustainable infrastructure training to small systems.
- There are 3 remaining SNCs, all of which are recalcitrant.
- The DRWA mobile training unit has not been used so far this year.
- 12 small systems have received technical assistance.

##### 2. Source Water Protection

Please see attached reports.

## **IV. Financial Summary**

The following discussion provides additional details on the financial activities in the DWSRF.

### **A. Status of Loans**

The DWSRF closed \$2,724,000 in loans. Appendix D shows the status of loans closed in SFY 2008. Information includes the following: loan amount, interest rate, term, cumulative disbursements, and schedule of principal and interest payments.

### **B. Loan Disbursements/Cash Draw Proportionality**

\$13,733,539.62 was disbursed in 2008. Appendix E lists each disbursement, each loan-related federal ASAP cash draw, and the federal/state proportionality ratio resulting from cash draw activities.

### **C. Set-Aside Disbursements**

\$3,077,414.12 was disbursed in set-aside funds in SFY 2008. Appendix F lists each set-aside related cash draw and disbursement by type of set-aside.

### **D. Annual Repayment/Aging of Accounts**

Appendix G lists loan repayments in SFY 2008.

### **E. Loan Portfolio Analysis**

No DWSRF loans are rated by a bond agency in Delaware.

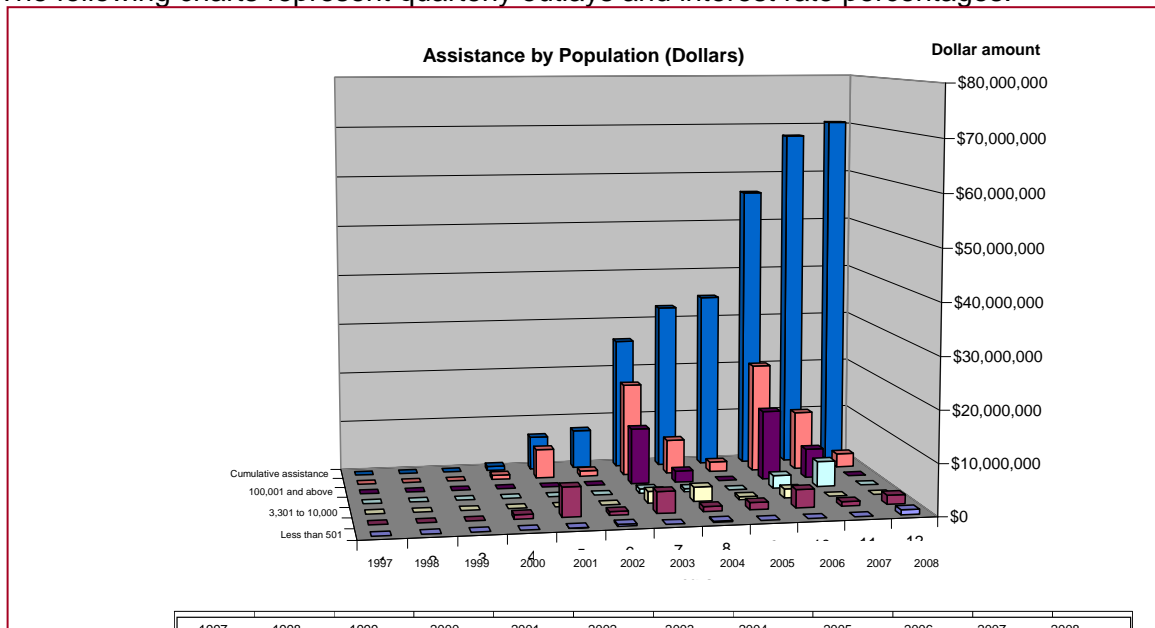
### **F. Investments**

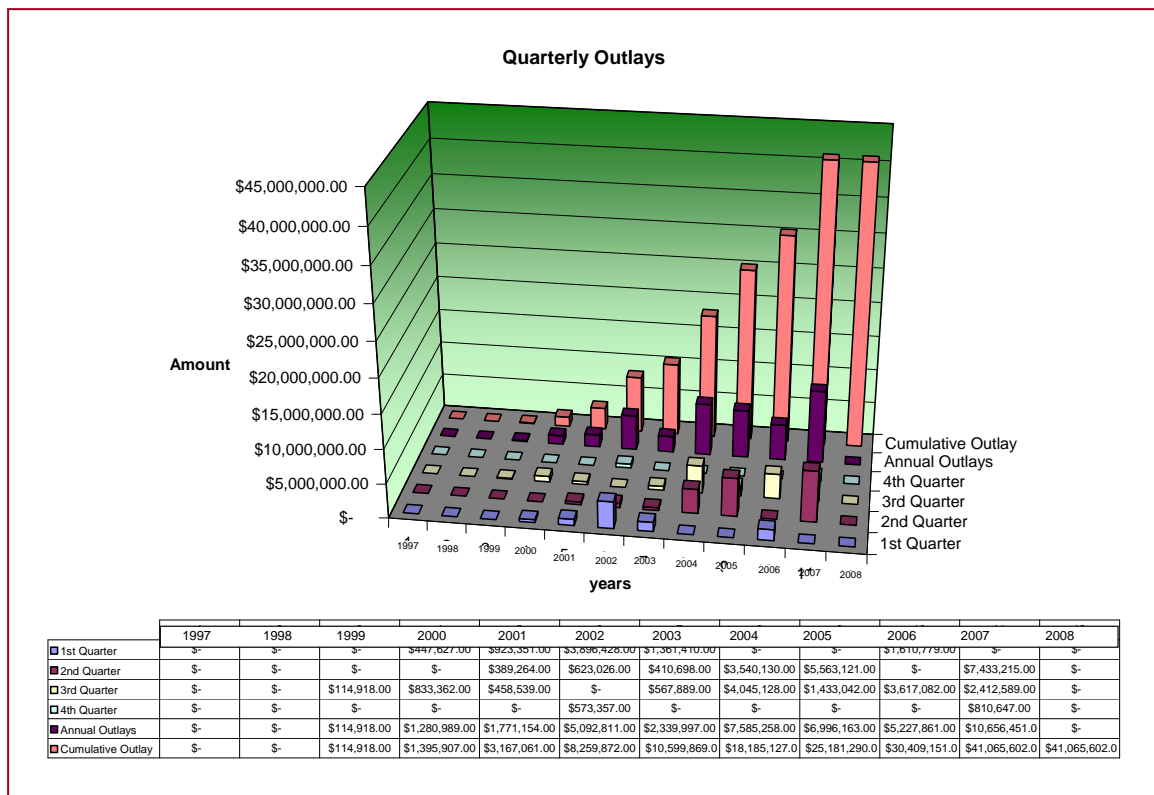
The DWSRF had \$794,332 in investments at the end of SFY 2008. The Office of the Treasurer manages these funds in compliance with state investment practices. The DWSRF is monitored monthly to confirm that the Treasurer credits interest to the DWSRF account in a timely fashion. Management reports from the state-wide Financial Management System that document the DWSRF investment earnings are on file in the DHSS fiscal office.

### **G. Financial Statements**

DWSRF audit reports for 2008 are attached as Appendix G.

The following charts represent quarterly outlays and interest rate percentages.





## V. Compliance with Operating Agreement and Grant Conditions

### Operating Agreement:

DHSS has drafted an Operating Agreement. The agreement is in draft form and is being reviewed internally. The final draft should reach EPA for comment by Jan 15, 2009.

### Grant Conditions:

DHSS and EPA meet or conduct a conference call each month to confirm the status of grant conditions, among other discussions. Notes from each meeting or call are distributed. Please refer to those minutes to see specific progress on grant conditions.

## **APPENDIX A: 2007-2008 Project Priority List**

B. Ready to Proceed										Feb-08
Rank	Project Name	Score	County	PWSID#	System/Applicant	Project Description	Pop.	Project Cost	Partial Funding	Cumulative Total
	Wilmington Brandywine		NC	DE0000663	City of Wilmington	installation of MF/UF membrane system	140,000	\$18,975,000	\$7,156,177	\$7,156,177
3	Wilmington mains	548	NC	DE0000663	City of Wilmington	main replacement throughout City	140,000	\$5,000,000	\$5,000,000	\$12,156,177
4	Town of Laurel	462	Sussex	DE0000597	Town of Laurel	main replacement throughout	3,668	\$2,512,000	\$2,512,000	\$14,668,177
5	AWC Vilone Village	342	NC	DE0000663	Artesian Water Company	main renewal	250,000	\$977,000	\$977,000	\$15,645,177
5	AWC Brookland Terrace	342	NC	DE0000552	Artesian Water Company	main renewal	250,000	\$479,500	\$479,500	\$16,124,677
5	AWC Newport Heights	342	NC	DE0000552	Artesian Water Company	main renewal	250,000	\$463,800	\$463,800	\$16,588,477
6	AWC Llangollen Estates	332	NC	DE0000552	Artesian Water Company	main renewal	250,000	\$902,100	\$902,100	\$17,490,577
6	AWC Centerville Road	332	NC	DE0000552	Artesian Water Company	main renewal	250,000	\$225,000	\$225,000	\$17,715,577
8	AWC Linden Green	182	NC	DE0000552	Artesian Water Company	main renewal	250,000	\$116,000	\$116,000	\$17,831,577
9	AWC Collins Park	162	NC	DE0000552	Artesian Water Company	main renewal	250,000	\$588,000	\$588,000	\$18,419,577
								\$30,238,400	\$18,419,577	

## **APPENDIX B: Project Scoring Criteria**

## 2007 DWSRF Project Ranking Form

Project Priority Criteria		Points	Notes
I. Quality Deficiencies			
Acute	E. coli	70	
	Nitrate	70	
	Nitrite	70	
	Total		
Non-Acute	Total coliform bacteria	50	
	Volatile Organic Chemicals (VOCs) (+MTBE)	50	
	Total Trihalomethanes (TTHMs)	50	
	Synthetic Organic Chemicals (SOCs)	50	
	Trace Metals	50	
	Unregulated VOCs	50	
	Unregulated SOCs	50	
	Turbidity	50	
	Radiologicals	50	
	Lead/Copper	50	
	Total		
Secondary Standards	Iron	20	
	Trace Metals (Manganese, Silver, Copper)	20	
	pH	20	
	Chloride	20	
	Total Dissolved Solids	20	
	Sulfate	20	
	Taste	20	
	Odor	20	
	Color	20	
	Total		
			Max = 100
II. Quantity Deficiencies			
Acute	Water pressure <25 psi	45	
	Lack of adequate water supply	45	
	Total		
Chronic	Lack of adequate water storage	25	
	Water pressure >100 psi	25	
	Water shortages (during peak demand)	25	
	Total		

Project Priority Criteria		Points	Notes
III. Treatment/Design			
Infrastructure	Degraded treatment facility	30	
	Inadequate source-intake structure	30	
	Faulty pumping station	30	
	Inaccurate controls/instrumentation, lack of SCADA system	30	
	Unsatisfactory storage	30	
	Aging or corroded transmission mains	30	
	Aging or corroded distribution mains	30	
	Lack of meters/broken meters	30	
	Replacement of contaminated source with uncontaminated source	30	
	Lack of disinfection treatment	30	
	Lack of corrosion control treatment	30	
	Lack of nitrate removal treatment	30	
	Lack of other proper treatment	30	
	Inadequate filtration	30	
	Nonfunctioning backflow prevention device	30	
	Lack of critical component redundancy	30	
	Unreliable emergency power source	30	
	Total		
	IV. Security Measures		
	Treatment plant	25	
	Storage site	25	
	Distribution system	25	
	Source	25	
	Electronic	25	
	Total		
V. Financial Need			
Economic Indicator	SMHI is less than 51% CMHI	400	
	SMHI is 51%–60% of CMHI	300	
	SMHI is 61%–70% of CMHI	200	
	SMHI is 71%–75% of CMHI	150	
	SMHI is 76%–80% of CMHI	100	
	SMHI is 81%–85% of CMHI	80	
	SMHI is 86%–90% of CMHI	60	
	SMHI is 91%–95% of CMHI	40	
	SMHI is 96%–100% of CMHI	20	
	SMHI greater than 100% of CMHI	0	
	Total		



Priority Criteria		Points	Notes
<b>VI. Regulations &amp; Compliance</b>			
<i>Compliance With Regulations</i>	Lead/Copper Rule	40	
	Surface Water Treatment Rule	40	
	Stage 1 Disinfectants/Disinfection Byproducts	40	
	Phase I, II, or V	40	
	Total Coliform Rule	40	
	Interim Enhanced Surface Water Treatment Rule	40	
	Radon	40	
	Radionuclides	40	
	Long-Term I Enhanced Surf. Water Treat. Rule	40	
	Filter Backwash Rule	40	
	MTBE primary standard	40	
<b>Total</b>			
<i>Compliance/ Enforcement Status</i>	In Significant Non-Compliance	15	Max = 30
	Active Bilateral Compliance Agreement	15	
	Alternate Contaminant Level	15	
	Active Administrative Compliance Order	15	
<b>Total</b>			
<i>Compliance With Future Regulations</i>	Groundwater Rule	5	
	Arsenic	5	
	Sulfate	5	
	Long-Term II Enhanced Surf. Water Treat. Rule	5	
	Stage II Disinfectants/Disinfection Byprod. Rule	5	
<b>Total</b>			
<b>VII. Regionalization</b>			
<i>Project to Result In</i>	Consolidation of multiple non-complying water systems	25	
	Consolidation with 1 non-complying water system	20	
	Consolidation of complying water systems	15	
	Service to areas of existing private wells with water quality deficiencies	20	
	Service to areas with existing private wells	15	
	Emergency interconnection with another Public Water System	15	
<b>Total</b>			Max = 60

Project Priority Criteria		Points	Notes
<b>VIII. System Description</b>			
<i>Population Served</i>	25 to 1,000	10	
	1,001 to 10,000	15	
	≥ 10,000	5	
	<b>Total</b>		
<i>Public Water System Type</i>	Municipally Owned Community	10	
	Other Community	5	
	Non-Transient Non-Community (non-profit)	3	
	Transient Non-Community (non-profit)	1	
	<b>Total</b>		
<b>IX. Bonus Points</b>			
<i>Fiscal DWSRF Requests; On Previous IUP Fundable List</i>	Multiyear project partially funded	15	Max = 15
	Bypassed	15	
	Below funding line	10	
	Comprehensive list, only	5	
	<b>Total</b>		
<i>Positive Practices</i>	Rate structure promotes conservation	2	
	Metered at service connections	2	
	Unaccounted water loss of 10% or less	2	
	Certified operator	2	
	Document maintenance schedule review	2	
	Cross connection control program	2	
	Evaluation by Capacity Development for existing systems	2	
	<b>Total</b>		

Date Completed: \_\_\_\_\_

Completed By: \_\_\_\_\_

Reviewed By: \_\_\_\_\_

Grand Total  
Point Score

**APPENDIX C:**  
**Source Water Protection Progress Reports**

**Delaware Drinking Water State Revolving Fund  
Source Water Protection 15% Set-Aside  
Progress Report for 7/1/07 – 12/31/07**

**EPA Goal 2:** *Safe and Clean Water – Ensure drinking water is safe. Restore and maintain oceans, watersheds, and their aquatic ecosystems to protect human health, support economic and recreational activities, and provide healthy habitat for fish, plants, and wildlife.*

**EPA Objective 2.1:** *Protect Human Health: Protect human health by reducing exposure to contaminants in drinking water (including protecting source waters), in fish and shellfish, and in recreational waters.*

**EPA Subobjective 2.2.1:** *By 2011, 91 percent of the population served by community water systems will receive drinking water that meets all applicable health-based drinking water standards through effective treatment and source water protection (2005 Baseline: 89 percent)*

**EPA Region III 15% Set-aside Contact:** *Andrea Bennett;*

**State 15% Set-aside Contact(s):** *Ed Hallock (DHSS), John Barndt (DNREC)*

**Part I: Overlapping (On-going) Activities (FFY 04, 05, 06)**

Activities: <i>Note – All FTE's funded participate in all or some of these on-going activities (1 – 12 below). This includes 4 FTE's and 1 seasonal staff. These have not been segregated by % for the individual activities.)</i>	FTE	Planned Cost	Actual Cost	Outputs/out comes
1. Baseline Source Water Assessments (SWAs) - <b>1999 is used as the “baseline” for measuring progress in source water assessment activities by EPA.</b> [See attached Table 1 for EPA reporting numbers for the baseline includes those public water supply systems on the ODW list at the time the Delaware Source Water Assessment Plan (SWAP) was approved by EPA. EPA only requires reporting for Community systems; however, DE will address community, transient non-community, and non-transient non-community since all are assessed per the Delaware SWP law. [See attached table 1 for the sum for all years.]		Salary and OEC	Salary and OEC	# of FINAL assessments for the period – <b>7</b> ; # of Draft assessments for the period – <b>7</b> .
2. Post-Baseline Source Water Assessments – <b>Delaware has elected to prepare assessments for new post-base-line systems and to revise assessments for systems which have, for instance, added new wells or de-activated wells.</b> [See attached table 1 for the sum for all years.]		Salary and OEC	Salary and OEC	# of post-baseline assessments for the period - <b>0</b>
3. Resolution of field data from problematic water public water systems -- <b>In</b>		Salary and	Salary	Sum of 1 and 2

addition, problematic baseline assessments are occurring as a single concerted effort and includes approximately 30 systems. Work includes research, GPS and well identification, and resolution of facts for these systems. In addition, maintaining coordination between the DHSS ODW list of systems and the list systems requiring assessments requires periodic updating since new systems come on line as more people are included and then fall under the definition of a public water system.		OEC	and OEC	above – 7;
4. Detection of regulated contaminants - <b>The most current query of types of contaminant <u>sources</u>* is segregated between surface-water and ground-water based systems (Table 2 and 3, respectively). For the surface water based systems, attempts were made to include those from both DE and PA since large portions of the watersheds extend into southeastern PA.</b>		Salary and OEC	Salary and OEC	On-going – <b>See previous reports for Tables 2 and 3</b>
5. Potential sources of contamination that have been added or deleted - <b>It is not yet possible to track sources of contamination that have been deleted or added until a number of new database initiatives are completed. Key among them is (1) the DNREC Environmental Navigator which will allow the individual programs to maintain their site databases on line and (2) updates of initial SWAs. However, since the initiation of the source water assessment program, two potential sources of contamination are in the process of being added: First, DE has enacted an Above Storage Tank law is presently in the process of inventorying these facilities. The DWR-SWAPP and DAWM-TMB programs have met to coordinate these activities. These will be particularly important to the surface water systems.</b>		Salary and OEC	Salary and OEC	On-going
6. Updates to land-use designations - <b>The original SWA’s used the 1997 land use maps. Recently the 2001 land use maps were made available and are now being used in assessments. For all of this reporting period the newer maps have been used in the assessments.</b>		Salary and OEC	Salary and OEC	Contractual work was completed to modify the assessment software to use the 2001 land use coverage’s.

<p>7. Number of local governments assisted by staff in Source Water Protection (PLUS Reviews, RPATAC Reviews, Local Ordinance development) –</p> <p><b>A. Preliminary Land Use Service (PLUS) Reviews -- PLUS Reviews for the reporting period as follows: <u>12</u> Comprehensive Land Use Plan PLUS Reviews - Town of Greenwood; Town of Clayton; City of New Castle; Sussex County; City of Seaford; Town of Camden; Slaughter Beach; Town of Fenwick Island; Town of Selbyville; Bethel; Laurel; and Blades. <u>35</u> Land Development PLUS reviews - Landings @ Felton; The Reserves @ Warren Meadows; Milford School district (2 reviews ??); Overbrook Center; GIU-Giuttari Property; Appoquinimink School District (2 reviews); Trotter Farm; Pelican Landing; Peninsula Square; DSU-Commercial Center; ALAM Property; J.G. Townsend; Bayberry Development; Kohl-South; Poole Property; Spring Arbor; Gateway; Fox Meadow; Dover Civic Center; Smith Tract; Corrado Property; Silverwood; Savannah Development; White Tail; Island Farm; LBJ Consulting; Hertrich Property; Norwood Development; Cherry Walk; Pelican Point; Delaware Group; Captain Hill.;</b></p> <p><b>B. RPATAC – DNREC is represented on this technical advisory committee for New Castle County which meets monthly. Projects which occur within source water areas must assure that county-described standards are maintained and that RPATAC provides advice to the county on whether applicants have done so. The source water maps for New Castle County are available on the Delaware SWAPP web site at <a href="http://www.wr.udel.edu/swaphome/index.html">http://www.wr.udel.edu/swaphome/index.html</a> and click on useful links.</b></p> <p><b>C. SWP Ordinance Activity – The SWP program staff participated in the development of draft ordinances for many local governing bodies throughout the reporting period as follows: Sussex County, Kent County, and some revisions to New Castle County, Dover, Wilmington, City of New Castle, Bridgeville, Middletown, Seaford, Georgetown, Camden, Lewes, Little Creek, Millsboro, and Bowers Beach. The map summary of local ordinances is now</b></p>		Salary and OEC	Salary and OEC	<p>A. <b>47</b> PLUS reviews;</p> <p>B. RPATAC meetings held monthly;</p> <p>C. <b>15</b> draft local SWP ordinances</p>
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<p>available at <a href="http://www.wr.udel.edu/swap/home/index.html">http://www.wr.udel.edu/swap/home/index.html</a> and click on swap status. The map will have links to ordinances as they are completed. The SWAPP staff is currently working with partners at the Delaware Rural Water Association and the University of Delaware.</p> <p><b>Model SWP Ordinance --</b> A “model” ordinance was developed in cooperation with the DRWA over the period and is being used as a template for many of the local communities.</p> <p><b>EPA Source Water Protection Performance Tracking –</b> Table 2 is an excerpt from Delaware reporting for source water protection strategies “in-place” and “substantially implemented”. These measures are also reported to EPA under separate cover as requested.</p>				
<p>8. Updates to SWAPP and Well Permitting databases - SWAPP database updates occur continually but are primarily based upon two factors:</p> <p><b>(1) Updates from SDWIS (made possible during this reporting period).</b></p> <p><b>(2) Addition of new wells or abandonment of old ones. This also includes daily well permit entry, querying, etc associated with new public water well applications. All of these are reviewed, entered into the Well Permitting Database, flagged for notice to the ODW, and forwarded to the SWAPP hydrologists for entry. Weekly queries are also made of the database to assure that all public well permits have been flagged and forwarded for incorporation into the assessments. 51 public well permits processed during the reporting period.</b></p> <p><b>(3) Under contract, the source water area polygon project was completed and has been made available to the public. The coverage was approved for release by the Cabinet Committee on State Planning Issues as required by the state Source Water law. Once complete the SWA polygons will be available statewide and will be updated as needed. (See contract item # R)</b></p>		Salary and OEC	Salary and OEC	<p>(1) On-going;</p> <p>(2) <b>51</b> public well permits during the reporting period.</p> <p>(3) SWA Polygons are complete and available to the public</p>
<p>9. Measures taken to ensure that SWAPP was coordinated with ODW – <b>There are several aspects to coordination between DNREC-SWP and the DHSS-ODW as</b></p>		Salary and OEC	Salary and	CTAC Meetings –

<p><b>follows:</b></p> <p><b>(1) <u>Advisory committee</u></b> -- The DHSS-ODW is a member of the Source Water Protection Citizens and Technical Advisory Committee which meets quarterly and has been invited to attend progress meetings for SWP-funded projects with the USGS and DGS;</p> <p><b>(2) <u>Public Well Permit Notification</u></b> -- DNREC recently instituted an automatic notification to the DHSS-ODW when new public supply wells are permitted by DNREC. This allows the DHSS-ODW to take steps necessary when new wells are added to existing or new PWS Systems;</p> <p><b>(3) <u>Database Sharing</u></b> -- Data transfer between the DNREC Well Permitting database and the DHSS-ODW SDWIS has been developed with improvements provided to allow DNREC to query the SDWIS database with queries developed by the ODW;</p> <p><b>(4) <u>Assessments</u></b> -- Copies of completed source water assessments are routinely provided to the ODW.</p> <p><b>(5) <u>Water on TAP</u></b> – The Source Water program provided an update on the program and ordinance status to the ODW’s newsletter.</p>			OEC	9/6/07.
<p><b>10. SWAPP Coordination Activities – There are various planned and un-planned activities associated with SWAP coordination that occurred during the reporting as follows:</b></p> <ul style="list-style-type: none"> <li>• <b>SWP Citizens and Technical Advisory Committee – This committee meets quarterly and met on 9/6/07. The focus of recent meetings has been on surface water source water protection and on promoting efforts by local governments to develop source water protection ordinances. All activities of this committee (agendas, etc) are found on the SWP web site and are open to the public.</b></li> <li>• <b>State Cabinet Committee on State Planning Issues – On 12/6/07 the Department provided this executive level committee the source water GIS project for their consideration and approval prior to its release to the public. It was unanimously approved.</b></li> </ul>		Salary and OEC	Salary and OEC	<b>6</b> - SWAPP un-planned coordination activities



<p>11. Miscellaneous SWAP Support Activities – There were various support activities of note conducted during the period:</p> <ul style="list-style-type: none"> <li>• <b>Lewes Well field Millings Support – Hydrologist contacted and routinely inspected progress in the removal of asphalt millings from near the Lewes public supply wells;</b></li> <li>• <b>SIRB/ODW MOU Support – Program staff provided comment from WSS to this requested notification of VOA-type contaminants that are found in PWS supplies that are below the MCL;</b></li> <li>• <b>SWP Database activities – SWAP-GAS 2002 project – managed and oversaw the development and release of important update that included latest land use maps; Assisted the ODW in setting up their Cancer Consortium database on PC; periodic troubleshooting of SWAP database and SWAP_GAS, as needed; periodic update of the Site Index Database, as needed;</b></li> <li>• <b>Piedmont Salt Water Project – Program staff organized several meetings with water companies, WRA, and DelDOT to discuss problems and solutions related to salt contamination in the winter due to road salting in large PWS supplies; Doug also prepared a grant proposal for consideration by the Trust for Public Lands to study the problem;</b></li> <li>• <b><u>FOIA Request Responses:</u> Program staff processed 2 FOIA requests for source water related information – John Hopkins University for Cancer Consortium database support and; Seaford area WHPAs for EEC, Inc., a consultant performing a phase 1 ESA for a property purchased from the City of Seaford;</b></li> <li>• <b>Pierson Corner Project (formerly the Sand Castle Daycare site) – Program staff assisted the SIRB and ODW in various aspects of their investigation of TCE contaminated well including well research, field sampling, and area reconnaissance;</b></li> <li>• <b>Cheswold Royal Farms – Program staff accompanied the WPB staff in investigating the possible water quality problems from their well that</b></li> </ul>				
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<p>had been referred to DRNEC by the DHSS-ODW;</p> <ul style="list-style-type: none"> <li>• <b>Sea Breeze</b> – Due to salt water and referral by the DHSS-ODW, program staff worked to have this well abandoned and to have the unit hooked to adjacent public water supply. The latter was completed and the former is on-going.</li> <li>• <b>SWAPP/UST Program Joint Project</b> – Program staff worked with the DNREC Tank Management Branch to develop a work plan and agreement for jointly funding a seasonal inspector to prioritize inspection of Tank Facilities located within source water protection areas. The position should be hired and begin work in the next reporting period. Program staff is developing GIS tools to help this inspector to identify SWP areas and tank facilities within these areas.</li> </ul>				
<p>12. <b>Public Education Activities</b> – 2 education events were conducted during the period which involved source water protection education:</p> <ul style="list-style-type: none"> <li>• <b>Coast Day, Lewes, DE, 10/7/07</b> – Staff from both the Source Water and the Ground Water protection programs attended this one-day event with a booth providing source water protection and ground water protection information.</li> <li>• <b>American Council of Engineering Consultants, Newark, DE, 11/28/07</b> – John Barndt provided a presentation on Delaware’s source water protection program including progress in local ordinance development.</li> </ul>		Salary and OEC	Salary and OEC	2 -- educational activities
<p>13. <b>Staffing and Staff Training</b> –</p> <ul style="list-style-type: none"> <li>• <b>Staffing</b> -- The SWP program has been fully staffed during the reporting period.</li> <li>• <b>Staff Training</b> – The following courses were attended during the reporting period: <ul style="list-style-type: none"> <li>1. <b>Ground Water Protection Technical Conference, San Diego, CA, 9/15-18/07</b> – John Barndt Attended the conference and the special one-day Source Water protection conference at the forum;</li> </ul> </li> </ul>		Salary and OEC	Salary and OEC	On-going

<p>2. DGS Sponsored Advances in Well Drilling, Newark, DE, U/D, 10/30/07 – Several staff members attended this day-long field training event;</p> <p>3. ArcMap II Training, Dover, 10/1-3/07 – One staff member attended this required training course;</p> <p>4. SDWIS Database Training, Dover, 7/10/07 – Several staff members attended this ODW sponsored internal training.</p>				
<p><b>Part II. Rolling Activities (FFY 04, 05, 06)</b>  <i>Note: All projects funded thru the DWSRF 15% Set-aside are included in this report under this revised format. For future reports, only those funded by OPEN grants will be included.</i></p>				
<p>13. Update of basic hydrogeological data reports - There are a number of major projects funded from the DWSRF-SWP under various fiscal year grants. As the projects are completed, the reports are also posted on the DNREC SWAPP web site at <a href="http://www.wr.udel.edu/swaphome/publications.html">http://www.wr.udel.edu/swaphome/publications.html</a></p> <p>The major projects funded through the SWAPP set-aside and brief status follow:</p> <p><b>A. Distribution of Selected Contaminants in Public Water Supplies in the Surficial Aquifer, DE -- See earlier reports for information. The final report is on line at <a href="http://md.water.usgs.gov/publications/ofr-01-327/index.html">http://md.water.usgs.gov/publications/ofr-01-327/index.html</a></b></p>				A-Completed
<p><b>B. Lewes-Rehoboth WHP Modeling -- See earlier reports for information. The final report is on-line at <a href="http://www.udel.edu/dgs/Publications/pubsonline/RI65.pdf">http://www.udel.edu/dgs/Publications/pubsonline/RI65.pdf</a></b></p>				B-Completed
<p><b>C. Impact of Known or Suspected Contaminant Sources on Selected Public Drinking Water Supplies in DE -- See earlier reports for information. The final report is on-line at</b></p>				C-Completed

<a href="http://www.wr.udel.edu/swaphome/Publications/KJR02031.pdf">http://www.wr.udel.edu/swaphome/Publications/KJR02031.pdf</a>				
<b>D. Manual for Source Water Protection -- See earlier reports for information. The final manual is available on the SWP web site at <a href="http://www.wr.udel.edu/swaphome/phase2/Publications/publications2.html">http://www.wr.udel.edu/swaphome/phase2/Publications/publications2.html</a></b>				D-Completed
<b>E. TEPP Well Database Migration – See earlier reports for information.</b>				E. Completed
<b>F. Long Neck Area Mercury Study – See earlier reports for information. The report is on line at <a href="http://md.water.usgs.gov/publications/sir-2006-5011/index.html">http://md.water.usgs.gov/publications/sir-2006-5011/index.html</a></b>				F. Completed
<b>G. Ground Water Availability in Kent County</b> The U.S. Geological Survey and the DE Geological Survey, under contract to DNREC, are updating the ground-water availability reports for Kent County which were originally prepared in the early 1970's. The USGS is researching and updating aquifer and water use information while the DGS is drilling test wells in areas of the county where geologic information is lacking. This project is to be completed by the DGS and is referenced in the contract for the project in item O.  The DGS portion of the project has been completed and the final report accepted. It is available as a DGS as a Report of Investigations (copies enclosed) and on the DGS web site at <a href="http://www.udel.edu/dgs/Publications/pubsonline/RI72.pdf">http://www.udel.edu/dgs/Publications/pubsonline/RI72.pdf</a>				G. Geology Completed; Water Use extended into the Sussex County project to be completed by DGS. (See O)
<b>H. Hydrogeologic Assessment Project for Eastern Sussex County.</b>  This project has been completed and copies are attached and the report is available on line at <a href="http://www.udel.edu/dgs/Publications/pubsonline/RI70.pdf">http://www.udel.edu/dgs/Publications/pubsonline/RI70.pdf</a>				H. Completed

<p><b>I. Hydrogeologic Assessment Project for Eastern Sussex County.</b></p> <p>The DGS has also made the entire digital data set available on line for both eastern and western Sussex County at <a href="http://www.udel.edu/dgs/Publications/pubsonline/DP06-01.zip">http://www.udel.edu/dgs/Publications/pubsonline/DP06-01.zip</a></p>				I. Completed
<p><b>J. Source Water Program Web Site</b></p> <p>Delaware's source water web site is housed at the University of DE where it is maintained by Water Resources Agency for DNREC. It is found at <a href="http://www.wr.udel.edu/swaphome/index.html">http://www.wr.udel.edu/swaphome/index.html</a>.</p>				J. On-going with updates of meetings, assessments, etc.;
<p><b>K. EPA Polygon and Data Reporting Project – See earlier reports for Information.</b></p>				K. Completed
<p><b>L. FATE AND TRANSPORT OF ARSENIC IN DELAWARE SOILS: ASSESSING POTENTIAL IMPACTS ON WATER QUALITY</b></p> <p>The final report has been completed and is available on line at the source water web site in <i>Publications</i> at <a href="http://www.wr.udel.edu/swaphome/publications.html">http://www.wr.udel.edu/swaphome/publications.html</a></p>				L. Completed
<p><b>M. Status of XML Schema – See earlier reports for information.</b></p>	4-6 hrs/ 12 weeks			M. Completed
<p><b>N. Hydrogeological model – DNREC has re-targeted these funds to support two projects – First to augment additional drilling in Sussex County as requested by DGS (See item O below) and second, partial funding of a study of use of Rapid Infiltration Basins as a UIC technology in Delaware for wastewater as it impacts potential ground water drinking water supplies (See item P below).</b></p>				N. Not initiated

<p><b>O. Ground Water Resources for Sussex County, Delaware (with an Update for Kent County), Delaware Geological Survey – As of the end of December, 2007, significant progress has been made toward goals on the Sussex County ground-water project. The work conducted in calendar year 2007 (months 8 through 19 of the project) focused on establishing the geologic framework of the study areas. This included compilation and review of data for mapping the unconfined aquifer in Kent County as well as existing data on the confined aquifers of Sussex County. Work in late 2007 focused on ten research holes drilled between June and September and on the compilation and analysis of the resulting data (lithologic logs, geophysical logs, cuttings samples). Refinement of stratigraphic and aquifer picks for Sussex County has continued, as has work on the Kent County unconfined aquifer grid. Furthermore, planning and data organization for the Kent and Sussex County hydrologic analysis for has begun. More specific details of 2007 project-related activities are available in the project report on file with DNREC.</b></p> <p><b>Note: The Department increased the funding amount for this project upon a request by the DGS to add several additional borings to the project work. This is being done to assure adequate coverage of the entire county and to take advantage of the mobilization of the drilling contractor and DGS staff.</b></p>	\$318,384			O. On-going starting in 6/2006 for 2 ½ year period
<p><b>P. Rapid Infiltration Basin Study – The Source water grant is currently funding Phase II of this project (Phase I had been funded by the CWA 106 grant). The funding line is expected to be increased by approximately \$104,000 during the next reporting period in order to restore the full work needed – the initial contract had been reduced to accommodate funding uncertainties for Phase II. Progress to date is as follows:</b></p> <p><b>1. Continued literature search of the land application of waste water, rapid infiltration basin system (RIBS) design and operation, common treatment practices applied before land application and the potential impact of nutrient</b></p>				P. On-going

<p>content of waste water on the environment.</p> <p>2. Progress in the evaluation and comparison of regulations, pre-application treatment, monitoring and site management requirements of Northeastern and Mid-Atlantic United States on RIBS. We have completed analysis of results of influent and effluent samples from wastewater treatment plants serving RIB sites Delaware, North Carolina, Massachusetts, and New Jersey. We have requested additional information from Massachusetts to better identify key elements of their operation and maintenance protocols that could be applicable to RIBS in Delaware. We have requested additional information from NJ officials to characterize the wastewater treatment processes at the sites that we have not visited.</p> <p>3. Influent and effluent samples collected from DNREC permitted RIBS and associated waste water treatment plants have been analyzed by the Bioresources Engineering Soil and Water Quality Research Laboratory at the University of Delaware (UD) Extractions of sediment samples from NCC Water Farm 2 have been processed and analyzed by the UD Soils Laboratory.</p> <p>4. Approval for Phase II of this project (addressing the impact of RIBS to ground water systems) and submitted a separate proposal for field research to DNREC for review (see previous note regarding increased funding for the next period).</p> <p>5. We have met with New Castle County and their consultants and conducted numerous hydraulic tests at Water Farm 2 to assess the feasibility of conducting an experiment on a test RIB at that site.</p> <p>6. Work is nearly 75 % complete on the first draft of the final report for Phase I.</p>				
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<p><b>Planned Activities:</b></p> <ol style="list-style-type: none"> <li><b>1. Complete the draft final report for Phase I and submit for review.</b></li> <li><b>2. Begin field work at Cape Henlopen SP RIBS site. The first field exercise will consist of test coring in the RIBS, installation of shallow monitoring wells, and characterization of the aquifer and ground-water flow.</b></li> <li><b>3. Continue collaboration with NCC and their consultants on the Water Farm 2 project.</b></li> </ol>				
<p><b>Q. Delaware Rural Water Association Wellhead Protection Specialist – DNREC is temporarily funding the DRWA Wellhead Specialist for a period of no more than one year to continue coordination work with small and rural communities on aspects of wellhead protection. Per the DRWA request, this funding and contract will be terminated as of January 15, 2008. The remaining funds will be used to augment budget readjustments to fund Phase II of the Rapid Infiltration Basin Study (See item P above). The following activities have occurred:</b></p> <ul style="list-style-type: none"> <li><b>• WHP Rider worked the following systems on WHP, SWAP, and SWAP Ordinance development issues: Delmar, Lewes, Selbyville, County Seat Gardens, Sandhill Acres, Pineridge MHP, Sandhill TP, Laurel Village, Holiday Pines and Lake Forest Estates.</b></li> <li><b>• Assisted many systems with preparation of their Consumer Confidence reports.</b></li> <li><b>• Worked with DNREC and other DRWA staff in developing the template for local source water protection ordinances now being used by DNREC.</b></li> </ul>	\$80,000			<p><b>Q. On-going; contract signed and activity begun.</b></p>



<p><b>R. Delaware SWP State-wide Polygon Project – This project was completed and the deliverables accepted by DNREC. The final polygon coverage was also approved by the State Cabinet Committee on State Planning Issues and is now available to the public. The polygon coverage’s for both the wellhead protection areas and the excellent ground water recharge areas can be found on the Department of Natural Resources &amp; Environmental Control site link at <a href="#">Delaware Environmental Navigator</a> Once there, the user should hover over Downloads and then click on “GIS Layers”. This will take the user to where you can download several GIS data layers that DNREC has created. There is also a start link at the Delaware SWAPP web site at <a href="http://www.wr.udel.edu/swaphome/index.html">http://www.wr.udel.edu/swaphome/index.html</a> and click on mapping resources and then the Delaware Environmental link on that page and follow the previous directions.</b></p>	\$5,200			R. Completed

**Table 1. Summary of Source Water Assessments (baseline and post-baseline as of 1/08)**

		<b>Community PWS</b>	<b>Non-Transient PWS</b>	<b>Transient PWS</b>	<b>Total PWS</b>
<b>Baseline System Assessments</b>	<b>Total # Systems</b>	<b>222</b>	<b>116</b>	<b>188</b>	<b>526</b>
	<b># Completed Assessments</b>	<b>221</b>	<b>112</b>	<b>185</b>	<b>518</b>
	<b>% Completed Assessments</b>	<b>99.5%</b>	<b>96.5%</b>	<b>98.4%</b>	<b>98.5%</b>
<b>Post-Baseline System Assessments</b>	<b>Total # Systems</b>	<b>46</b>	<b>22</b>	<b>19</b>	<b>84</b>
	<b># Completed Assessments</b>	<b>46</b>	<b>22</b>	<b>19</b>	<b>84</b>
	<b>% Completed Assessments</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>System Re-Assessments</b>	<b># Completed</b>	<b>2</b>			
<b>Baseline + Post-Baseline</b>	<b>% Completed</b>	<b>121%</b>	<b>119%</b>	<b>110%</b>	<b>116%</b>

**Table 2. Delaware Source Water Reporting for Program Measures Excerpt – Source Water Protection Strategies “in-place” and “substantially implemented” as of 10/07.**

**3.1: SOURCE WATER AREAS WITH SWP STRATEGIES IMPLEMENTED**

[View instructions](#)

**State: Delaware**

	Strategy in Place and Implemented		Substantial Strategy Implementation	
	CWS/SWAs	Population	# CWS/SWAs	Population
Ground water-based	100%	515,545	46	269,775
Surface water-based	100%	276,130	2	209,487
Total	100%	791,675	48	479,662

**Delaware Drinking Water State Revolving Fund  
Source Water Protection 15% Set-Aside  
Progress Report for 1/1/08 – 6/30/08**

**EPA Goal 2:** *Safe and Clean Water – Ensure drinking water is safe. Restore and maintain oceans, watersheds, and their aquatic ecosystems to protect human health, support economic and recreational activities, and provide healthy habitat for fish, plants, and wildlife.*

**EPA Objective 2.1:** *Protect Human Health: Protect human health by reducing exposure to contaminants in drinking water (including protecting source waters), in fish and shellfish, and in recreational waters.*

**EPA Subobjective 2.2.1:** *By 2011, 91 percent of the population served by community water systems will receive drinking water that meets all applicable health-based drinking water standards through effective treatment and source water protection (2005 Baseline: 89 percent)*

**EPA Region III 15% Set-aside Contact:** *Andrea Bennett;*

**State 15% Set-aside Contact(s):** *Ed Hallock (DHSS), John Barndt (DNREC)*

**Part I: Overlapping (On-going) Activities (FFY 04, 05, 06, 07)**

Activities: <i>Note – All FTE's funded participate in all or some of these on-going activities (1 – 12 below). This includes 4 FTE's and 1 seasonal staff. These have not been segregated by % for the individual activities.)</i>	FTE	Planned Cost	Actual Cost	Outputs/out comes
1. Baseline Source Water Assessments (SWAs) - 1999 is used as the “baseline” for measuring progress in source water assessment activities by EPA. [See attached Table 1 for EPA reporting numbers for the baseline includes those public water supply systems on the ODW list at the time the Delaware Source Water Assessment Plan (SWAP) was approved by EPA. EPA only requires reporting for Community systems; however, DE will address community, transient non-community, and non-transient non-community since all are assessed per the Delaware SWP law. [See attached table 1 for the sum for all years.]		Salary and OEC	Salary and OEC	# of FINAL assessments for the period – 3; # of Draft assessments for the period – 4.
2. Post-Baseline Source Water Assessments – Delaware has elected to prepare assessments for new post-base-line systems and to revise assessments for systems which have, for instance, added new wells or de-activated wells. [See attached table 1 for the sum for all years.]		Salary and OEC	Salary and OEC	# of post-baseline assessments for the period - 4

3. Resolution of field data from problematic water public water systems -- <b>In addition, problematic baseline assessments are occurring as a single concerted effort and includes approximately 30 systems. Work includes research, GPS and well identification, and resolution of facts for these systems. In addition, maintaining coordination between the DHSS ODW list of systems and the list systems requiring assessments requires periodic updating since new systems come on line as more people are included and then fall under the definition of a public water system.</b>		Salary and OEC	Salary and OEC	Sum of 1 and 2 above – 7;
4. Detection of regulated contaminants - <b>The most current query of types of contaminant <u>sources</u>* is segregated between surface-water and ground-water based systems (Table 2 and 3, respectively). For the surface water based systems, attempts were made to include those from both DE and PA since large portions of the watersheds extend into southeastern PA.</b>		Salary and OEC	Salary and OEC	On-going – <b>See previous reports.</b>
5. Potential sources of contamination that have been added or deleted - <b>It is not yet possible to track sources of contamination that have been deleted or added until a number of new database initiatives are completed. Key among them is (1) the DNREC Environmental Navigator which will allow the individual programs to maintain their site databases on line and (2) updates of initial SWAs. However, since the initiation of the source water assessment program, two potential sources of contamination are in the process of being added: First, DE has enacted an Above Storage Tank law is presently in the process of inventorying these facilities. The DWR-SWAPP and DAWM-TMB programs have met to coordinate these activities. These will be particularly important to the surface water systems.</b>		Salary and OEC	Salary and OEC	On-going
6. Updates to land-use designations - <b>The original SWA’s used the 1997 land use maps. Recently the 2001 land use maps were made available and are now being used in assessments. For all of this reporting period the newer maps have been used in the assessments.</b>		Salary and OEC	Salary and OEC	Contractual work was completed to modify the assessment software to use the 2001 land use

<p>7. Number of local governments assisted by staff in Source Water Protection (PLUS Reviews, RPATAC Reviews, Local Ordinance development) –</p> <p><b>A. Preliminary Land Use Service (PLUS) Reviews -- PLUS Reviews for the reporting period as follows:</b></p> <ul style="list-style-type: none"> <li>• <b>8 Comprehensive Land Use Plan PLUS Reviews - Ellendale, Kent County and supplemental, Frankford, Dover, Cheswold, Harrington, Newark, and Elsmere.</b></li> <li>• <b>16 Land Development PLUS reviews - Cypress Hall, Milford Library, CR School district, Ingram Village, Southpoint Crossing, Milford DelDOT, Smith Tract, Kings Highway Partners, Deerfield Meadows, Levels Business Park, Pawnee Village, The Moorings on Pepper Creek, Wandandale, Twin Cedars, Cypress Creek, and NKS Distribution.</b></li> </ul> <p><b>B. RPATAC – DNREC is represented on this technical advisory committee for New Castle County which meets monthly. Projects which occur within source water areas must assure that county-described standards are maintained and that RPATAC provides advice to the county on whether applicants have done so. The source water maps for New Castle County are available on the Delaware SWAPP web site at <a href="http://www.wr.udel.edu/swap/home/index.html">http://www.wr.udel.edu/swap/home/index.html</a> and click on useful links.</b></p> <p><b>C. SWP Ordinance Activity – The SWP program staff participated in the development of 12 draft or modifications of ordinances for many local governing bodies throughout the reporting period as follows: Kent County; Bowers Beach; City of Lewes; Georgetown; Harrington; Odessa, Sussex County, New Castle County, City of Wilmington, City of New Castle, and Bridgeville, and Dover. The map summary of local ordinances is now available at <a href="http://www.wr.udel.edu/swap/home/index.html">http://www.wr.udel.edu/swap/home/index.html</a> and click on swap status. The map will have links to ordinances as they are completed. The SWAPP staff is currently working with partners at the Delaware Rural Water Association and</b></p>		Salary and OEC	Salary and OEC	<p>coverage's.</p> <p><b>A. 24 PLUS reviews;</b></p> <p><b>B. RPATAC meetings held monthly;</b></p> <p><b>C. 12 draft local SWP ordinances</b></p> <p><b>D. Tracking of EPA measures for strategies 'in place' and 'substantially implemented' – See table 2</b></p>
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<p>the University of Delaware.</p> <p><b>Model SWP Ordinance -- A “model” ordinance was developed in cooperation with the DRWA over the period and is being used as a template for many of the local communities. The model is available on the SWAPP web site.</b></p> <p><b>D. EPA Source Water Protection Performance Tracking – Table 2 is an excerpt from Delaware reporting for source water protection strategies “in-place” and “substantially implemented”. These measures are also reported to EPA under separate cover as requested.</b></p>				
<p>8. Updates to SWAPP and Well Permitting databases - SWAPP database updates occur continually but are primarily based upon two factors:</p> <p><b>(1) Updates from SDWIS (made possible during this reporting period).</b></p> <p><b>(2) Addition of new wells or abandonment of old ones. This also includes daily well permit entry, querying, etc associated with new public water well applications. All of these are reviewed, entered into the Well Permitting Database, flagged for notice to the ODW, and forwarded to the SWAPP hydrologists for entry. Weekly queries are also made of the database to assure that all public well permits have been flagged and forwarded for incorporation into the assessments. 51 public well permits processed during the reporting period.</b></p> <p><b>(3) Routine Maintenance of SWAP Database – SWAPP Staff enters newly found PWS systems and wells into the database; updates name changes; investigates well and PWS status; and searches for supporting documentation (i.e. number of wells, well in use, and abandonment reports)</b></p> <p><b>(4) The source water area polygon project was completed and has been made available to the public on the DNREC Environmental Navigator at the DNREC web site at <a href="http://www.nav.dnrec.delaware.gov/dnreceis/eis_mainmenu.asp">http://www.nav.dnrec.delaware.gov/dnreceis/eis_mainmenu.asp</a></b></p> <p><b>The SWA polygons will be updated as needed. (See contract item # R)</b></p>		Salary and OEC	Salary and OEC	<p>(1) On-going;</p> <p>(2) <b>51</b> public well permits during the reporting period.</p> <p>(3) SWA Polygons are complete and available to the public on the DNREC Environmental navigator – <b>See Link</b></p>

<p>9. Measures taken to ensure that SWAPP was coordinated with ODW – <b>There are numerous aspects to coordination between DNREC-SWP and the DHSS-ODW as follows:</b></p> <p>(1) <b><u>Advisory committee</u></b> -- The DHSS-ODW is a member of the Source Water Protection Citizens and Technical Advisory Committee which met on March 26 and June 18, 2008.</p> <p>(2) <b><u>Public Well Permit Notification</u></b> -- DNREC recently instituted an automatic notification to the DHSS-ODW when new public supply wells are permitted by DNREC. This allows the DHSS-ODW to take steps necessary when new wells are added to existing or new PWS Systems;</p> <p>(3) <b><u>Database Sharing</u></b> -- Data transfer between the DNREC Well Permitting database and the DHSS-ODW SDWIS has been developed with improvements provided to allow DNREC to query the SDWIS database with queries developed by the ODW;</p> <p>(4) <b><u>Assessments</u></b> -- Copies of completed source water assessments are routinely provided to the ODW as they are completed; updated SWAP maps for the three counties and provided to ODW for review and final copies were subsequently provided to the Office of Drinking Water and the Delaware Geological Survey, as they requested.</p> <p>(5) <b><u>Water on TAP</u></b> – The Source Water program provided updates on the program and ordinance status to the ODW’s newsletter.</p> <p>(6) <b><u>Borrowers Conference</u></b> – The SWAPP are preparing for participation on the ODW’s Borrowers Conference scheduled for July 2008. Both a booth and SWAP presentation are being prepared.</p> <p>(7) <b><u>DRWA SWP Forum</u></b> – SWAPP staff attended this forum on 3/31/08 in Milford, DE</p>		Salary and OEC	Salary and OEC	CTAC Meetings – 3/26/08 and 6/18/08
<p>10. SWAPP Coordination Activities – <b>There are various planned and un-planned activities associated with SWAP coordination that occurred during the reporting as follows:</b></p> <ul style="list-style-type: none"> <li>• SWP Citizens and Technical Advisory Committee – This committee meets quarterly and met on 3/26/08 and 6/18/08. Recent meetings</li> </ul>		Salary and OEC	Salary and OEC	6 - SWAPP un-planned coordination activities



<p><b>focused on Pharmaceuticals in Water, EPA’s Source Water collaborative Initiatives, and Status of special funded projects; All activities of this committee (agendas, etc) are found on the SWP web site and meetings are open to the public.</b></p> <ul style="list-style-type: none"> <li>• <b>Christina Basin Coordinating Committee Meeting – SWAPP staff participated in 4/17/08 conference call meeting.</b></li> <li>• <b>Stormwater Regulation Liaison – SWAPP staff have attended meetings of the committee revising the Sediment and Stormwater Regulations and several related seminars and meetings to assure coordination with the source water protection program.</b></li> </ul>				
<p>11. Miscellaneous SWAP Support Activities – There were various support activities of note conducted during the period:</p> <ul style="list-style-type: none"> <li>• <b><u>SWP Database activities</u> – SWAPP staff provided GIS information to consultants and other government agencies as requested; Continued to provide updates to the Well permitting GIS project including Site Index updates and polygons e.g. new RIB facilities, location corrections, etc; SDWIS Access – prepared request for contractor to evaluate the problems with query access and development of a plan to address the matter.</b></li> <li>• <b><u>Road Salt Activity</u> – SWAPP staff organized meetings of the interested parties (water systems in NCC), DeIDOT, and DHSS to discuss the issue and trouble shoot next steps. SWAPP staff has prepared a proposal for possible 319 funding to investigate this problem.</b></li> <li>• <b><u>FOIA Request Responses: 1: Georgetown Route 113 project –DeIDOT contractor requested locations of public wells near the area of interest for a highway reconstruction &amp; widening project taking place on Route 113 around Georgetown. The wellhead protection area and excellent ground-water recharge areas GIS layers were supplied.</u></b></li> </ul>				

<ul style="list-style-type: none"> <li>• <b><u>SWAPP/UST Program Joint Project</u></b> – The State of Delaware Department of Natural Resources and Environmental Control’s Tank Management Branch was successful in hiring a seasonal Environmental Scientist I to conduct compliance inspections of underground and aboveground storage tank systems in source waster protection areas. The seasonal environmental scientist started on February 19, 2008.</li> </ul> <p>The seasonal environmental scientist attended several mandatory training events including: 40 hour OSHA training, Sexual Harassment/Diversity Training, Lead with Trust Training, How to deal with difficult people, EPA sponsored UST training for managers of federal facilities, and the USEPA Region 3 Inspector training.</p> <p>DNREC’s Tank Management Branch continued to coordinate with the Source Water Protection Program to identify high priority well head protection areas that contained UST systems. These areas were targeted for inspection. Since February 19, 2008 eighteen facilities were inspected by the seasonal employee (Please see a breakdown by county in the attached spreadsheet). <u>Sixteen</u> inspections were conducted in New Castle County, <u>one</u> in Kent County, and <u>one</u> in Sussex County.</p> <p>In addition, the seasonal environmental scientist has participated in the following efforts:</p> <p>The development of a UST operator training program;  Contracting for state lead UST removals;  Participation in our Department’s planning technical advisory committee;  FIRST Fund projects involving the removal of orphaned UST systems;  AST GIS projects;  Inspections of new installations for aboveground and underground storage tanks; and</p>				
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Assisted hydrologists with corrective action efforts on EPA funded LUST assessment projects.				
13. Public Education Activities – <b>education events were conducted during the period which involved source water protection education:</b> <ul style="list-style-type: none"> <li>• SWAPP staff gave a presentation on SWP and GIS for the 2008 GIS Conference, Dover, DE</li> <li>• Lewes Citizens Coalition – SWAPP staff met with this group to discuss the intent of source water ordinances and the impacts of coastal development. Special maps were created for the group as they requested.</li> </ul>		Salary and OEC	Salary and OEC	2 -- educational activities
13. Staffing and Staff Training – <ul style="list-style-type: none"> <li>• Staffing – One technical Hydrologist position became vacant due to a voluntary resignation. Due to a statewide hiring freeze, no action has yet been taken on filling the position.</li> <li>• Staff Training – The following courses were attended during the reporting period: Ground Water, EPA Course, Lukens Office, New Castle on 3/25-27/2008; U/D Seminar on Stormwater Retention Ponds, Newark, DE on 3/20/08; Introduction to ArcMap was completed on 6/27/08 from an earlier date; Ground Water Protection Council Annual Policy Meeting, Washington, DC, 3/16-18/2008; Pharmaceuticals in Water Summit, Philadelphia, PA, 6/5/08.</li> </ul>		Salary and OEC	Salary and OEC	On-going
<b>Part II. Rolling Activities (FFY 04, 05, 06, 07)</b> <i>Note: All projects funded thru the DWSRF 15% Set-aside are included in this report under this revised format. For future reports, only those funded by OPEN grants will be included.</i>				
13. Update of basic hydrogeological data reports - There are a number of major projects funded from the DWSRF-SWP under various fiscal year grants. As the projects are completed, the reports are also posted on the DNREC SWAPP web site at <a href="http://www.wr.udel.edu/swaphome/publications.html">http://www.wr.udel.edu/swaphome/publications.html</a>				

The major projects funded through the SWAPP set-aside and brief status follow:				
<b>A. Distribution of Selected Contaminants in Public Water Supplies in the Surficial Aquifer, DE -- See earlier reports for information. The final report is on line at <a href="http://md.water.usgs.gov/publications/ofr-01-327/index.html">http://md.water.usgs.gov/publications/ofr-01-327/index.html</a></b>				A-Completed
<b>B. Lewes-Rehoboth WHP Modeling -- See earlier reports for information. The final report is on-line at <a href="http://www.udel.edu/dgs/Publications/pubsonline/RI65.pdf">http://www.udel.edu/dgs/Publications/pubsonline/RI65.pdf</a></b>				B-Completed
<b>D. Impact of Known or Suspected Contaminant Sources on Selected Public Drinking Water Supplies in DE -- See earlier reports for information. The final report is on-line at <a href="http://www.wr.udel.edu/swaphome/Publications/KJR02031.pdf">http://www.wr.udel.edu/swaphome/Publications/KJR02031.pdf</a></b>				C-Completed
<b>D. Manual for Source Water Protection -- See earlier reports for information. The final manual is available on the SWP web site at <a href="http://www.wr.udel.edu/swaphome/phase2/Publications/publications2.html">http://www.wr.udel.edu/swaphome/phase2/Publications/publications2.html</a></b>				D-Completed
<b>E. TEPP Well Database Migration – See earlier reports for information.</b>				E. Completed
<b>F. Long Neck Area Mercury Study – See earlier reports for information. The report is on line at <a href="http://md.water.usgs.gov/publications/sir-2006-5011/index.html">http://md.water.usgs.gov/publications/sir-2006-5011/index.html</a></b>				F. Completed
<b>G. Ground Water Availability in Kent County The U.S. Geological Survey and the DE Geological Survey, under contract to</b>				G. Geology Completed;

<p><b>DNREC, are updating the ground-water availability reports for Kent County which were originally prepared in the early 1970's. The USGS is researching and updating aquifer and water use information while the DGS is drilling test wells in areas of the county where geologic information is lacking. This project is to be completed by the DGS and is referenced in the contract for the project in item O.</b></p> <p><b>The DGS portion of the project has been completed and the final report accepted. It is available as a DGS as a Report of Investigations (copies enclosed) and on the DGS web site at <a href="http://www.udel.edu/dgs/Publications/pubsonline/RI72.pdf">http://www.udel.edu/dgs/Publications/pubsonline/RI72.pdf</a></b></p>				<p>Water Use extended into the Sussex County project to be completed by DGS. (See O)</p>
<p><b>H. Hydrogeologic Assessment Project for Eastern Sussex County.</b></p> <p><b>This project has been completed and copies are attached and the report is available on line at <a href="http://www.udel.edu/dgs/Publications/pubsonline/RI70.pdf">http://www.udel.edu/dgs/Publications/pubsonline/RI70.pdf</a></b></p> <p><b>I. Hydrogeologic Assessment Project for Eastern Sussex County.</b></p> <p><b>The DGS has also made the entire digital data set available on line for both eastern and western Sussex County at <a href="http://www.udel.edu/dgs/Publications/pubsonline/DP06-01.zip">http://www.udel.edu/dgs/Publications/pubsonline/DP06-01.zip</a></b></p>				<p>H. Completed</p> <p>I. Completed</p>
<p><b>J. Source Water Program Web Site</b></p> <p><b>Delaware's source water web site is housed at the University of DE where it is maintained by Water Resources Agency for DNREC. It is found at <a href="http://www.wr.udel.edu/swaphome/index.html">http://www.wr.udel.edu/swaphome/index.html</a>.</b></p>				<p>J. On-going with updates of meetings, assessments, etc.;</p>
<p><b>K. EPA Polygon and Data Reporting Project – See earlier reports for</b></p>				<p>K.</p>

<b>Information.</b>				Completed
<b>L. FATE AND TRANSPORT OF ARSENIC IN DELAWARE SOILS: ASSESSING POTENTIAL IMPACTS ON WATER QUALITY</b>  The final report has been completed and is available on line at the source water web site in <i>Publications</i> at <a href="http://www.wr.udel.edu/swaphome/publications.html">http://www.wr.udel.edu/swaphome/publications.html</a>				L. Completed
<b>M. Status of XML Schema – See earlier reports for information.</b>	4-6 hrs/ 12 weeks			M. Completed
<b>N. Hydrogeological model – DNREC has re-targeted these funds to support two projects – First to augment additional drilling in Sussex County as requested by DGS (See item O below) and second, partial funding of a study of use of Rapid Infiltration Basins as a UIC technology in Delaware for wastewater as it impacts potential ground water drinking water supplies (See item P below).</b>				N. Not initiated
<b>O. Ground Water Resources for Sussex County, Delaware (with an Update for Kent County), Delaware Geological Survey –</b>  <b>Phase 1 tasks (June 2006 to September 2007):</b> <b>Overall Goals: Geologic data collection and compilation. Preliminary Sussex County geological results (confined aquifers) and Kent County study update (unconfined aquifer) results.</b> <ul style="list-style-type: none"> <li>• <i>Drill and log test holes: <u>Additional data acquired</u></i> – Although this phase of work is essentially complete, additional data have been acquired where available. These include: <ul style="list-style-type: none"> <li>○ 8 additional deep geophysical logs obtained from Kent and Sussex counties</li> <li>○ 1 site for wireline core near Fairmount planned for July (with</li> </ul> </li> </ul>	\$318,384			O. On-going starting in 6/2006 for 2 ½ year period

<p><b>StateMap project)</b></p> <p><b>In addition, publication-quality summary well logs were created for each of the ten test holes drilled in summer 2007, including geophysical logs, graphical lithology logs, and text descriptions of lithologies. These will be included in future reports.</b></p> <p><b>Phase 2 tasks (October 2007 to September 2008):</b></p> <p><b>Overall Goals: Hydrologic data collection and compilation. Sussex County hydrological interim results and Kent County study update results (focus on hydrology analyses).</b></p> <ul style="list-style-type: none"> <li>• <b><i>Verify all well locations. Added task not in original plan. <u>Complete</u> –</i></b>  <b>Constructed extensive spatial analysis of all DGS database wells for use in this project, including those uploaded from DNREC database dumps, to determine accuracy of well locations. Even small errors can impact the accuracy of grids, significantly so in areas of dense data.</b> <ul style="list-style-type: none"> <li>○ <b>The locations of 19281 wells were evaluated by spatial analysis of reported locations versus reported tax parcels.</b></li> <li>○ <b>1615 problem wells were identified for further action to identify correct locations, and were then individually evaluated by comparing tax parcel, landowner, and maps from well completion reports to current DGS GIS locations.</b></li> </ul> </li> <li>• <b><i>Review and Supplement of Unconfined Aquifer Data for Sussex County: <u>Under active consideration</u> –</i></b>  <b>Additional data available to supplement the unconfined aquifer map of Andres et al. (2006) are being reviewed for possible creation of an updated map. These include lithologic and geophysical logs from recently drilled wells, data from drilling for this project drilling, and data from DGS surficial geologic mapping program. We expect to decide by September if the differences are significant enough to warrant an updated map.</b></li> </ul>				
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<ul style="list-style-type: none"> <li>• <b><i>Map of Unconfined Aquifer in Kent County: <u>Preliminary work map completed</u></i></b> – An updated preliminary grid of the unconfined aquifer elevation has been constructed for Kent County. The preliminary map complete at the end of the last reporting period was further refined based on identification of a few remaining problem areas and regridding data.</li> <li>• <b><i>Construct Geological Cross Sections of Sussex County showing relationships of aquifers and confining layers: <u>Underway and nearly complete</u></i></b> – Analysis of the subsurface stratigraphy utilizing existing data and 2007 test hole data is nearly complete along selected cross-section lines. Preliminary geologic cross sections have been drafted to evaluate stratigraphic picks. Extensive micropaleontological analysis (foraminifera) has been conducted for six Sussex County holes to establish complicated correlations of Cheswold- and Piney Point-aquifer-equivalent strata and intervening confining units (complex unconformity relationships).</li> <li>• <b><i>Map Confined Aquifers in Sussex County: <u>Pending</u></i></b> - Confined aquifers maps will be constructed when cross-sections are finalized and correlations extended to intervening wells.</li> <li>• <b><i>Compile and Analyze Water-Level Data for Sussex and Kent Counties: <u>Compilation in progress</u></i></b> - We have completed construction of Access-based project hydrology database that includes water-level and pump-test data tied to screen depths. This has involved detailed verification of database entries and additions where needed. <ul style="list-style-type: none"> <li>○ Edited and filled in information gaps in DGS database (based on paper well schedule) by including county coding, adding elevations from DEM, dealing with multi screened well issues, and entering screen diameters/lengths.</li> <li>○ Generated coverage maps of currently available (DGS) pump test data in Kent and Sussex counties and, using spatial analysis, identified areas to target for further data collection</li> </ul> </li> </ul>				
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<ul style="list-style-type: none"> <li>○ Obtained additional well completion reports from DNREC (~200) based on sparse data areas identified in spatial analysis and added these to DGS database.</li> <li>• <b><i>Compile and Analyze Water-Use Data for Sussex and Kent Counties: <u>Initial organization begun</u></i></b> – Our project hydrology database has been designed to allow water use, by well type (domestic, agricultural, public, etc.), to be tied to aquifer based on well screen depths. We have also researched information on the population of agricultural users of ground-water using the Delaware Agricultural Census completed in 2002. A specific water use database will be constructed later in Phase 2.</li> </ul> <p><b>Phase 3 tasks (October 2008 to June 2009):</b>  <b>Overall Goals:</b> Complete hydrologic and water-use tasks. Overall interpretation, analysis, and verification. Results summarized in final contract reports on Sussex County work and Kent County update work. <i>Next phase: work pending.</i></p>				
<p><b>P. Distribution and Trends of Selected Contaminants in Public Water Supplies in the Surficial Aquifer, DE --</b></p> <p>The project was begun in April 2008 following a contract and work plan approval. The USGS is the lead agency in this project and began evaluating the original network used for the first of these studies in 1999. (See item A above). A more detailed progress report will follow in the next reporting period.</p>				<p>P. On-going starting in April 2008</p>
<p><b>Q. Rapid Infiltration Basin Study – The Source water grant is currently funding Phase II of this project (Phase I was jointly funded by the CWA 106 grant and the DWSRF-SWP set-aside.) Progress to date is as follows:</b></p> <p><b><u>RIB Study Phase I:</u></b></p>				<p>P. On-going</p>

<p><b>1. DGS has continued literature search of the land application of waste water, rapid infiltration basin system (RIBS) design and operation, common treatment practices applied before land application and the potential impact of nutrient content of waste water on the environment.</b></p> <p><b>2. DGS has submitted a draft Phase I final report to DNREC, received comments, and made significant progress towards finishing revisions. A proposal for Phase III and planning for additional future work are in progress.</b></p> <p><b>3. DGS has met with NCC and their consultants, reviewed site characterization reports and work plans, and sampled numerous wells at Water Farm 2 to assess the feasibility of conducting clean water infiltration and tracer experiments on a test RIB at that site. The County has stopped all work at that site. This has created significant obstacles to completing the tasks proposed for this site.</b></p> <p><b>4. DGS has installed 36 ground water monitoring points at Cape Henlopen State Park (CHSP). This includes 15 standard wells, and three, seven port multi level wells. Two rounds of samples have been collected from the traditional wells, and three rounds of samples have been collected from surface water and submitted to our laboratories. Some results have been received and are being reviewed. It appears that there is significant N and P contamination in the ground and surface waters at the site.</b></p> <p><b>5. More than 100 soil and sediment samples were collected within the infiltration basins at CHSP and submitted to our laboratories. Some results have been received and are being reviewed.</b></p> <p><b>6. Two rounds of samples have been collected from the traditional wells and three rounds of samples have been collected from surface water and</b></p>				
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<p>submitted to our laboratories. Some results have been received and are being reviewed. Seven data loggers have been installed in the traditional monitoring wells and six synoptic level measurements have been conducted. Results have been plotted as hydrographs and contour maps.</p> <p>7. A detailed numerical model of the CHSP site is being constructed and tested. Additional analytic particle tracking models have been run in ArcMap.</p> <p>8. Collaborative research arrangements for parallel projects have been established with faculty in the Colleges of Engineering and Agriculture and Natural Resources and the University Water Resources Center.</p> <p style="text-align: center;"><b>Planned RIB Phase I Activities:</b></p> <p>1. Complete the final report for Phase I and submit for final approval.</p> <p>2. Continue field work at CHSP RIBS site. The work will consist of well and surface water sampling and water level measurements by manual readings and data loggers. Sampling frequency will be every two months through February.</p> <p>3. Continue collaboration with NCC and their consultants on the Water Farm 2 project. Develop contingency plans to investigate other sites should this project not be restarted prior to September 15.</p> <p><b><u>RIB Study Phase II:</u></b></p> <p>1. Approval for Phase II of this project (addressing the impact of RIBS to ground water systems) and submitted a separate proposal for field</p>				
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research to DNREC for review and was approved during the period.				
2. We have met with New Castle County and their consultants and conducted numerous hydraulic tests at Water Farm 2 to assess the feasibility of conducting an experiment on a test RIB at that site.				
<p><b>Q. Delaware Rural Water Association Wellhead Protection Specialist – DNREC temporarily funded the DRWA Wellhead Specialist for a period of no more than one year to continue coordination work with small and rural communities on aspects of wellhead protection. Per the DRWA request, this funding and contract will be terminated as of January 15, 2008. The remaining funds will be used to augment budget readjustments to fund Phase II of the Rapid Infiltration Basin Study (See item P above). At the request of the DRWA, the contract was ended in January 2008. The following activities were completed:</b></p> <ul style="list-style-type: none"> <li>• <b>WHP Rider worked the following systems on WHP, SWAP, and SWAP Ordinance development issues: Delmar, Lewes, Selbyville, County Seat Gardens, Sandhill Acres, Pineridge MHP, Sandhill TP, Laurel Village, Holiday Pines and Lake Forest Estates.</b></li> <li>• <b>Assisted many systems with preparation of their Consumer Confidence reports.</b></li> <li>• <b>Worked with DNREC and other DRWA staff in developing the template for local source water protection ordinances now being used by DNREC.</b></li> </ul>	\$80,000			Q. Completed; contract signed and activity begun.
<b>S. Delaware SWP State-wide Polygon Project – This project was completed and the deliverables accepted by DNREC. The final polygon coverage was also approved by the State Cabinet Committee on State Planning Issues and is now</b>	\$5,200			R. Completed

<p>available to the public. The polygon coverage's for both the wellhead protection areas and the excellent ground water recharge areas can be found on the Department of Natural Resources &amp; Environmental Control site link at <a href="#">Delaware Environmental Navigator</a>. Once there, the user should hover over Downloads and then click on "GIS Layers". This will take the user to where you can download several GIS data layers that DNREC has created. There is also a start link at the Delaware SWAPP web site at <a href="http://www.wr.udel.edu/swaphome/index.html">http://www.wr.udel.edu/swaphome/index.html</a> and click on mapping resources and then the Delaware Environmental link on that page and follow the previous directions.</p>				
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**Table 1. Summary of Source Water Assessments (baseline and post-baseline as of 6/08)**

		Community PWS	Non-Transient PWS	Transient PWS	Total PWS
<b>Baseline System Assessments</b>	<b>Total # Systems</b>	<b>222</b>	<b>116</b>	<b>188</b>	<b>526</b>
	<b># Completed Assessments</b>	<b>222</b>	<b>112</b>	<b>187</b>	<b>521</b>
	<b>% Completed Assessments</b>	<b>100%</b>	<b>96.5%</b>	<b>99.5%</b>	<b>99%</b>
<b>Post-Baseline System Assessments</b>	<b>Total # Systems</b>	<b>46</b>	<b>22</b>	<b>19</b>	<b>84</b>
	<b># Completed Assessments</b>	<b>46</b>	<b>22</b>	<b>19</b>	<b>84</b>
	<b>% Completed Assessments</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

<b>System Re-Assessments</b>	<b># Completed</b>	<b>2</b>			
<b>Baseline + Post-Baseline</b>	<b>% Completed</b>	<b>122%</b>	<b>119%</b>	<b>109%</b>	<b>115%</b>

**Table 2. Delaware Source Water Reporting for Program Measures Excerpt – Source Water Protection Strategies “in-place” and “substantially implemented” as of 6/08.**

**EPA Measure3.1: SOURCE WATER AREAS WITH SWP STRATEGIES IMPLEMENTED**

[View instructions](#)

**State: Delaware**

	<b>Strategy in Place and Implemented</b>		<b>Substantial Strategy Implementation</b>	
	<b>CWS</b>	<b>Population</b>	<b># CWS</b>	<b>Population</b>
Ground water-based	100%	515,545	201 (of 211)	443,668
Surface water-based	100%	276,130	2 (of 3)	209,487
Total	100%	882,041	203	653,155

## **APPENDIX D: Loan Status- Activity**

## 2008 Binding Commitments and Loan Closings-DHSS

System	Binding Commitment	Loan Closing Date	\$ Amount
Town of M	10/1/2007	12/21/2007	1,644,000
TUI Oak M	10/5/2007	12/21/2007	940,000
TUI Chimn	10/5/2007	12/21/2007	140,000
Total			2,724,000



# Summary of Drinking Water Loans FY 2008

## Loan Status

	Date of Loan	Funds Committed	Interest Rate	Repayment Terms & Schedules	Funds Disbursed FY 2008	Cumulative Funds Disbursed	Cumulative Interest Repaid	Cumulative Principal Repaid	Loan Balance 6/30/2008
			Admin. Fee						
Town of Millsboro	6/30/2008	\$1,644,000	1.315%	20 years commencing TBD	\$0	\$0	\$0	\$0	\$0
			1.315%						
Tidewater Utilities,s	12/21/2007	\$140,000	1.820%	20 years commencing TBD	\$0	\$0	\$0	\$0	\$0
			1.820%						
Tidewater Utilities	12/21/2007	\$940,000	1.820%	20 years commencing TBD	\$0	\$0	\$0	\$0	\$0
			1.820%						

## **APPENDIX E: Disbursements**

2008 Binding Commitments and Loan Closings-DHSS			
System	Binding Commitment Date	Loan Closing Date	\$ Amount
Town of Millsboro	10/1/2007	12/21/2007	1,644,000
TUI Oak Meadows	10/5/2007	12/21/2007	940,000
TUI Chimney Hill Supplemental	10/5/2007	12/21/2007	140,000
Total			2,724,000

	<b>Projects DPH/ODW 3001</b>		<b>4% Admin. DPH/ODW 3002 DNREC 0801</b>		<b>2% Tech. Assist. DPH/ODW 3003</b>		<b>10% Prog. Mgmt. DPH/ODW 3004 DNREC 0805</b>		<b>15% Local Assist. DPH/ODW 3006 DNREC 0806</b>		<b>Total Draw Amounts</b>
	<u>Amount</u>		<u>Amount</u>		<u>Amount</u>		<u>Amount</u>		<u>Amount</u>		
	<b>EPA DA</b>		<b>EPA DD</b>		<b>EPA DE</b>		<b>EPA DF</b>		<b>EPA DG</b>		
ODW	13,733,539.62	+	274,142.02	+	110,222.80	+	633,915.55	+	581,240.32	=	15,333,060.31
DNREC	0.00	+	169,937.80	+	0.00	+	365,057.37	+	942,898.40	=	1,477,893.57
Totals	<u>13,733,539.62</u>	+	<u>444,079.82</u>	+	<u>110,222.80</u>	+	<u>998,972.92</u>	+	<u>1,524,138.72</u>	=	<u>16,810,953.88</u>

FS-993914-01

	Projects DPH/ODW 3001		4% Admin. DPH/ODW 3002 DNREC 0801		2% Tech. Assist. DPH/ODW 3003		10% Prog. Mgmt. DPH/ODW 3004 DNREC 0805		15% Local Assist. DPH/ODW 3006 DNREC 0806		Total Draw Amounts
	Amount		Amount		Amount		Amount		Amount		
<b><u>7/17/2007</u></b>	<b>EPA 00DA</b>		<b>EPA 00DD</b>		<b>EPA 00DE</b>		<b>EPA 00DF</b>		<b>EPA 00DG</b>		
ODW	171,746.63	+	131.89	+	0.00	+	4,158.01	+	2,477.56	=	178,514.09
DNREC	0.00	+	15,001.80	+	0.00	+	2.38	+	2.65	=	15,006.83
Totals	171,746.63	+	15,133.69	+	0.00	+	4,160.39	+	2,480.21	=	193,520.92
<b><u>9/17/2007</u></b>	<b>EPA 00DA</b>		<b>EPA 00DD</b>		<b>EPA 00DE</b>		<b>EPA 00DF</b>		<b>EPA 00DG</b>		
ODW	3,458,597.37	+	16,677.52	+	1,959.00	+	1,062.21	+	25,893.75	=	3,504,189.85
DNREC	0.00	+	0.00	+	0.00	+	0.00	+	0.00	=	0.00
Totals	3,458,597.37	+	16,677.52	+	1,959.00	+	1,062.21	+	25,893.75	=	3,504,189.85
<b><u>10/18/2007</u></b>	<b>EPA 00DA</b>		<b>EPA 00DD</b>		<b>EPA 00DE</b>		<b>EPA 00DF</b>		<b>EPA 00DG</b>		
ODW	0.00	+	1,078.09	+	0.00	+	766.19	+	0.00	=	1,844.28
DNREC	0.00	+	6,755.16	+	0.00	+	0.00	+	0.00	=	6,755.16
Totals	0.00	+	7,833.25	+	0.00	+	766.19	+	0.00	=	8,599.44
<b><u>11/26/2007</u></b>	<b>EPA 00DA</b>		<b>EPA 00DD</b>		<b>EPA 00DE</b>		<b>EPA 00DF</b>		<b>EPA 00DG</b>		
ODW	0.00	+	0.00	+	0.00	+	0.00	+	0.00	=	0.00
DNREC	0.00	+	2,433.49	+	0.00	+	0.00	+	0.00	=	2,433.49
Totals	0.00	+	2,433.49	+	0.00	+	0.00	+	0.00	=	2,433.49
<b><u>12/11/2007</u></b>	<b>EPA 00DA</b>		<b>EPA 00DD</b>		<b>EPA 00DE</b>		<b>EPA 00DF</b>		<b>EPA 00DG</b>		
ODW	0.00	+	0.00	+	0.00	+	0.00	+	0.00	=	0.00
DNREC	0.00	+	321.42	+	0.00	+	0.00	+	0.00	=	321.42
Totals	0.00	+	321.42	+	0.00	+	0.00	+	0.00	=	321.42
<b><u>Combined</u></b>											
ODW	3,630,344.00	+	17,887.50	+	1,959.00	+	5,986.41	+	28,371.31	=	3,684,548.22
DNREC	0.00	+	24,511.87	+	0.00	+	2.38	+	2.65	=	24,516.90
Totals	3,630,344.00	+	42,399.37	+	1,959.00	+	5,988.79	+	28,373.96	=	3,709,065.12

**FS-993914-02**

	<b>Projects DPH/ODW 3001</b>		<b>4% Admin. DPH/ODW 3002 DNREC 0801</b>		<b>2% Tech. Assist. DPH/ODW 3003</b>		<b>10% Prog. Mgmt. DPH/ODW 3004 DNREC 0805</b>		<b>15% Local Assist. DPH/ODW 3006 DNREC 0806</b>		<b>Total Draw Amounts</b>
	<b>Amount</b>		<b>Amount</b>		<b>Amount</b>		<b>Amount</b>		<b>Amount</b>		
<b><u>7/17/2007</u></b>	<b>EPA 01DA</b>		<b>EPA 01DD</b>		<b>EPA 01DE</b>		<b>EPA 01DF</b>		<b>EPA 01DG</b>		
ODW	52.92	+	0.00	+	0.00	+	0.00	+	194.74	=	247.66
DNREC	0.00	+	0.00	+	0.00	+	2.14	+	56,225.91	=	56,228.05
Totals	52.92	+	0.00	+	0.00	+	2.14	+	56,420.65	=	56,475.71
<b><u>9/17/2007</u></b>	<b>EPA 01DA</b>		<b>EPA 01DD</b>		<b>EPA 01DE</b>		<b>EPA 01DF</b>		<b>EPA 01DG</b>		
ODW	63,719.82	+	42,491.26	+	9,732.00	+	95.29	+	97,695.54	=	213,733.91
DNREC	0.00	+	0.00	+	0.00	+	0.00	+	0.00	=	0.00
Totals	63,719.82	+	42,491.26	+	9,732.00	+	95.29	+	97,695.54	=	213,733.91
<b><u>10/18/2007</u></b>	<b>EPA 01DA</b>		<b>EPA 01DD</b>		<b>EPA 01DE</b>		<b>EPA 01DF</b>		<b>EPA 01DG</b>		
ODW	2,204,798.60	+	0.00	+	0.00	+	0.00	+	389.48	=	2,205,188.08
DNREC	0.00	+	11,500.83	+	0.00	+	241.00	+	1,848.24	=	13,590.07
Totals	2,204,798.60	+	11,500.83	+	0.00	+	241.00	+	2,237.72	=	2,218,778.15
<b><u>11/26/2007</u></b>	<b>EPA 01DA</b>		<b>EPA 01DD</b>		<b>EPA 01DE</b>		<b>EPA 01DF</b>		<b>EPA 01DG</b>		
ODW	737,916.74	+	0.00	+	0.00	+	0.00	+	0.00	=	737,916.74
DNREC	0.00	+	577.91	+	0.00	+	1,017.09	+	0.00	=	1,595.00
Totals	737,916.74	+	577.91	+	0.00	+	1,017.09	+	0.00	=	739,511.74
<b><u>12/11/2007</u></b>	<b>EPA 01DA</b>		<b>EPA 01DD</b>		<b>EPA 01DE</b>		<b>EPA 01DF</b>		<b>EPA 01DG</b>		
ODW	0.00	+	0.00	+	0.00	+	0.00	+	0.00	=	0.00
DNREC	0.00	+	0.00	+	0.00	+	208.61	+	131,453.21	=	131,661.82
Totals	0.00	+	0.00	+	0.00	+	208.61	+	131,453.21	=	131,661.82
<b><u>Combined</u></b>											
ODW	3,006,488.08	+	42,491.26	+	9,732.00	+	95.29	+	98,279.76	=	3,157,086.39
DNREC	0.00	+	12,078.74	+	0.00	+	1,468.84	+	189,527.36	=	203,074.94
Totals	3,006,488.08	+	54,570.00	+	9,732.00	+	1,564.13	+	287,807.12	=	3,360,161.33

FS-993914-03

	Projects DPH/ODW 3001		4% Admin. DPH/ODW 3002 DNREC 0801		2% Tech. Assist. DPH/ODW 3003		10% Prog. Mgmt. DPH/ODW 3004 DNREC 0805		15% Local Assist. DPH/ODW 3006 DNREC 0806		Total Draw Amounts
	Amount		Amount		Amount		Amount		Amount		
<b><u>7/17/2007</u></b>	<b>EPA 02DA</b>		<b>EPA 02DD</b>		<b>EPA 02DE</b>		<b>EPA 02DF</b>		<b>EPA 02DG</b>		
ODW	0.00	+	210.33	+	7,820.48	+	897.90	+	7,763.96	=	16,692.67
DNREC	0.00	+	68,618.76	+	0.00	+	0.00	+	17,209.59	=	85,828.35
Totals	0.00	+	68,829.09	+	7,820.48	+	897.90	+	24,973.55	=	102,521.02
<b><u>1/24/2008</u></b>	<b>EPA 02DA</b>		<b>EPA 02DD</b>		<b>EPA 02DE</b>		<b>EPA 02DF</b>		<b>EPA 02DG</b>		
ODW	0.00	+	1,340.89	+	0.00	+	213.58	+	7,490.68	=	9,045.15
DNREC	0.00	+	9,523.88	+	0.00	+	813.70	+	125,323.00	=	135,660.58
Totals	0.00	+	10,864.77	+	0.00	+	1,027.28	+	132,813.68	=	144,705.73
<b><u>3/20/2008</u></b>	<b>EPA 02DA</b>		<b>EPA 02DD</b>		<b>EPA 02DE</b>		<b>EPA 02DF</b>		<b>EPA 02DG</b>		
ODW	2,002,427.05	+	428.86	+	0.00	+	(0.54)	+	4,704.61	=	2,007,559.98
DNREC	0.00	+	2,453.96	+	0.00	+	0.00	+	12,715.99	=	15,169.95
Totals	2,002,427.05	+	2,882.82	+	0.00	+	(0.54)	+	17,420.60	=	2,022,729.93
<b><u>4/14/2008</u></b>	<b>EPA 02DA</b>		<b>EPA 02DD</b>		<b>EPA 02DE</b>		<b>EPA 02DF</b>		<b>EPA 02DG</b>		
ODW	109,211.86	+	0.00	+	664.86	+	26,065.19	+	10,799.62	=	146,741.53
DNREC	0.00	+	0.00	+	0.00	+	(13,824.09)	+	32,483.18	=	18,659.09
Totals	109,211.86	+	0.00	+	664.86	+	12,241.10	+	43,282.80	=	165,400.62
<b><u>6/16/2008</u></b>	<b>EPA 02DA</b>		<b>EPA 02DD</b>		<b>EPA 02DE</b>		<b>EPA 02DF</b>		<b>EPA 02DG</b>		
ODW	2,787,184.66	+	852.65	+	353.46	+	22,480.00	+	10,844.72	=	2,821,715.49
DNREC	0.00	+	210.54	+	0.00	+	606.88	+	6,903.81	=	7,721.23
Totals	2,787,184.66	+	1,063.19	+	353.46	+	23,086.88	+	17,748.53	=	2,829,436.72
<b><u>Combined</u></b>											
ODW	4,898,823.57	+	2,832.73	+	8,838.80	+	49,656.13	+	41,603.59	=	5,001,754.82
DNREC	0.00	+	80,807.14	+	0.00	+	(12,403.51)	+	194,635.57	=	263,039.20
Totals	4,898,823.57	+	83,639.87	+	8,838.80	+	37,252.62	+	236,239.16	=	5,264,794.02

**FS-993914-04**

	<b>Projects DPH/ODW 3001</b>		<b>4% Admin. DPH/ODW 3002 DNREC 0801</b>		<b>2% Tech. Assist. DPH/ODW 3003</b>		<b>10% Prog. Mgmt. DPH/ODW 3004 DNREC 0805</b>		<b>15% Local Assist. DPH/ODW 3006 DNREC 0806</b>		<b>Total Draw Amounts</b>
	<b>Amount</b>		<b>Amount</b>		<b>Amount</b>		<b>Amount</b>		<b>Amount</b>		
<b><u>7/17/2007</u></b>	<b>EPA 03DA</b>		<b>EPA 03DD</b>		<b>EPA 03DE</b>		<b>EPA 03DF</b>		<b>EPA 03DG</b>		
ODW	0.00	+	0.00	+	34,143.46	+	16,004.55	+	320.90	=	50,468.91
DNREC	0.00	+	9,503.64	+	0.00	+	33,277.81	+	122,213.34	=	164,994.79
Totals	0.00	+	9,503.64	+	34,143.46	+	49,282.36	+	122,534.24	=	215,463.70
<b><u>9/17/2007</u></b>	<b>EPA 03DA</b>		<b>EPA 03DD</b>		<b>EPA 03DE</b>		<b>EPA 03DF</b>		<b>EPA 03DG</b>		
ODW	15,851.90	+	0.00	+	0.00	+	0.00	+	0.00	=	15,851.90
DNREC	0.00	+	0.00	+	0.00	+	0.00	+	0.00	=	0.00
Totals	15,851.90	+	0.00	+	0.00	+	0.00	+	0.00	=	15,851.90
<b><u>10/18/2007</u></b>	<b>EPA 03DA</b>		<b>EPA 03DD</b>		<b>EPA 03DE</b>		<b>EPA 03DF</b>		<b>EPA 03DG</b>		
ODW	0.00	+	0.00	+	0.00	+	0.00	+	0.00	=	0.00
DNREC	0.00	+	628.25	+	0.00	+	0.00	+	1,061.17	=	1,689.42
Totals	0.00	+	628.25	+	0.00	+	0.00	+	1,061.17	=	1,689.42
<b><u>1/24/2008</u></b>	<b>EPA 03DA</b>		<b>EPA 03DD</b>		<b>EPA 03DE</b>		<b>EPA 03DF</b>		<b>EPA 03DG</b>		
ODW	0.00	+	0.00	+	0.00	+	4,187.34	+	1,343.80	=	5,531.14
DNREC	0.00	+	0.00	+	0.00	+	0.00	+	0.00	=	0.00
Totals	0.00	+	0.00	+	0.00	+	4,187.34	+	1,343.80	=	5,531.14
<b><u>3/20/2008</u></b>	<b>EPA 03DA</b>		<b>EPA 03DD</b>		<b>EPA 03DE</b>		<b>EPA 03DF</b>		<b>EPA 03DG</b>		
ODW	0.00	+	0.00	+	19,100.06	+	411.19	+	343.71	=	19,854.96
DNREC	0.00	+	4,740.54	+	0.00	+	9,186.88	+	25,288.92	=	39,216.34
Totals	0.00	+	4,740.54	+	19,100.06	+	9,598.07	+	25,632.63	=	59,071.30
<b><u>4/14/2008</u></b>	<b>EPA 03DA</b>		<b>EPA 03DD</b>		<b>EPA 03DE</b>		<b>EPA 03DF</b>		<b>EPA 03DG</b>		
ODW	0.00	+	0.00	+	0.00	+	0.00	+	0.00	=	0.00
DNREC	0.00	+	2,589.06	+	0.00	+	0.00	+	0.00	=	2,589.06
Totals	0.00	+	2,589.06	+	0.00	+	0.00	+	0.00	=	2,589.06
<b><u>6/16/2008</u></b>	<b>EPA 03DA</b>		<b>EPA 03DD</b>		<b>EPA 03DE</b>		<b>EPA 03DF</b>		<b>EPA 03DG</b>		
ODW	1,194,226.49	+	6,887.64	+	167.00	+	(5,764.46)	+	2,890.52	=	1,198,407.19
DNREC	0.00	+	4,551.34	+	0.00	+	1,000.00	+	39,229.50	=	44,780.84
Totals	1,194,226.49	+	11,438.98	+	167.00	+	(4,764.46)	+	42,120.02	=	1,243,188.03



**FS-993914-04**

<u>6/25/2008</u>	EPA 03DA		EPA 03DD		EPA 03DE		EPA 03DF		EPA 03DG		
ODW	987,805.58	+	0.00	+	0.00	+	0.00	+	0.00	=	987,805.58
DNREC	0.00	+	2,080.08	+	0.00	+	0.00	+	46,237.67	=	48,317.75
Totals	<u>987,805.58</u>	+	<u>2,080.08</u>	+	<u>0.00</u>	+	<u>0.00</u>	+	<u>46,237.67</u>	=	<u>1,036,123.33</u>
<b><u>Combined</u></b>											
ODW	2,197,883.97	+	6,887.64	+	53,410.52	+	14,838.62	+	4,898.93	=	2,277,919.68
DNREC	0.00	+	24,092.91	+	0.00	+	43,464.69	+	234,030.60	=	301,588.20
Totals	<u>2,197,883.97</u>	+	<u>30,980.55</u>	+	<u>53,410.52</u>	+	<u>58,303.31</u>	+	<u>238,929.53</u>	=	<u>2,579,507.88</u>

FS-993914-05

	Projects DPH/ODW 3001		4% Admin. DPH/ODW 3002 DNREC 0801		2% Tech. Assist. DPH/ODW 3003		10% Prog. Mgmt. DPH/ODW 3004 DNREC 0805		15% Local Assist. DPH/ODW 3006 DNREC 0806		Total Draw Amounts
	Amount		Amount		Amount		Amount		Amount		
<b><u>7/17/2007</u></b>	<b>EPA 04DA</b>		<b>EPA 04DD</b>		<b>EPA 04DE</b>		<b>EPA 04DF</b>		<b>EPA 04DG</b>		
ODW	0.00	+	16,362.10	+	4,253.36	+	65,676.77	+	60,632.67	=	146,924.90
DNREC	0.00	+	0.00	+	0.00	+	93,660.12	+	316.07	=	93,976.19
Totals	0.00	+	16,362.10	+	4,253.36	+	159,336.89	+	60,948.74	=	240,901.09
<b><u>9/17/2007</u></b>	<b>EPA 04DA</b>		<b>EPA 04DD</b>		<b>EPA 04DE</b>		<b>EPA 04DF</b>		<b>EPA 04DG</b>		
ODW	0.00	+	22,768.91	+	1,211.03	+	51,434.83	+	60,866.83	=	136,281.60
DNREC	0.00	+	0.00	+	0.00	+	0.00	+	0.00	=	0.00
Totals	0.00	+	22,768.91	+	1,211.03	+	51,434.83	+	60,866.83	=	136,281.60
<b><u>10/18/2007</u></b>	<b>EPA 04DA</b>		<b>EPA 04DD</b>		<b>EPA 04DE</b>		<b>EPA 04DF</b>		<b>EPA 04DG</b>		
ODW	10,866.34	+	32.96	+	0.00	+	8,649.90	+	20.53	=	19,569.73
DNREC	0.00	+	0.00	+	0.00	+	14,415.42	+	66,857.90	=	81,273.32
Totals	10,866.34	+	32.96	+	0.00	+	23,065.32	+	66,878.43	=	100,843.05
<b><u>1/24/2008</u></b>	<b>EPA 04DA</b>		<b>EPA 04DD</b>		<b>EPA 04DE</b>		<b>EPA 04DF</b>		<b>EPA 04DG</b>		
ODW	0.00	+	5,470.93	+	0.00	+	0.00	+	6,622.52	=	12,093.45
DNREC	0.00	+	0.00	+	0.00	+	43,738.92	+	74,025.92	=	117,764.84
Totals	0.00	+	5,470.93	+	0.00	+	43,738.92	+	80,648.44	=	129,858.29
<b><u>3/20/2008</u></b>	<b>EPA 04DA</b>		<b>EPA 04DD</b>		<b>EPA 04DE</b>		<b>EPA 04DF</b>		<b>EPA 04DG</b>		
ODW	0.00	+	7,673.78	+	0.00	+	0.00	+	92.93	=	7,766.71
DNREC	0.00	+	0.00	+	0.00	+	8,155.81	+	47,139.61	=	55,295.42
Totals	0.00	+	7,673.78	+	0.00	+	8,155.81	+	47,232.54	=	63,062.13
<b><u>4/14/2008</u></b>	<b>EPA 04DA</b>		<b>EPA 04DD</b>		<b>EPA 04DE</b>		<b>EPA 04DF</b>		<b>EPA 04DG</b>		
ODW	0.00	+	1,944.07	+	3,288.79	+	0.00	+	0.00	=	5,232.86
DNREC	0.00	+	3,106.48	+	0.00	+	0.00	+	37,965.26	=	41,071.74
Totals	0.00	+	5,050.55	+	3,288.79	+	0.00	+	37,965.26	=	46,304.60
<b><u>6/16/2008</u></b>	<b>EPA 04DA</b>		<b>EPA 04DD</b>		<b>EPA 04DE</b>		<b>EPA 04DF</b>		<b>EPA 04DG</b>		
ODW	(10,866.34)	+	13,740.82	+	105.32	+	(19,858.19)	+	(44,732.01)	=	(61,610.40)
DNREC	0.00	+	22,326.45	+	0.00	+	20,918.68	+	50,810.57	=	94,055.70
Totals	(10,866.34)	+	36,067.27	+	105.32	+	1,060.49	+	6,078.56	=	32,445.30

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**6/25/2008**

	EPA 04DA			EPA 04DD			EPA 04DE			EPA 04DF			EPA 04DG		
ODW	0.00	+		0.00	+		22,964.09	+		5,348.08	+		19,647.66	=	47,959.83
DNREC	0.00	+		2,595.88	+		0.00	+		0.00	+		7,249.73	=	9,845.61
Totals	<u>0.00</u>	+		<u>2,595.88</u>	+		<u>22,964.09</u>	+		<u>5,348.08</u>	+		<u>26,897.39</u>	=	<u>57,805.44</u>

**Combined**

ODW	0.00	+		67,993.57	+		31,822.59	+		111,251.39	+		103,151.13	=	314,218.68
DNREC	0.00	+		28,028.81	+		0.00	+		180,888.95	+		284,365.06	=	493,282.82
Totals	<u>0.00</u>	+		<u>96,022.38</u>	+		<u>31,822.59</u>	+		<u>292,140.34</u>	+		<u>387,516.19</u>	=	<u>807,501.50</u>

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	Projects DPH/ODW 3001		4% Admin. DPH/ODW 3002 DNREC 0801		2% Tech. Assist. DPH/ODW 3003		10% Prog. Mgmt. DPH/ODW 3004 DNREC 0805		15% Local Assist. DPH/ODW 3006 DNREC 0806		Total Draw Amounts
	Amount		Amount		Amount		Amount		Amount		
<b><u>7/17/2007</u></b>	<b>EPA 05DA</b>		<b>EPA 05DD</b>		<b>EPA 05DE</b>		<b>EPA 05DF</b>		<b>EPA 05DG</b>		
ODW	0.00	+	0.00	+	0.00	+	807.75	+	0.00	=	807.75
DNREC	0.00	+	0.00	+	0.00	+	603.32	+	353.29	=	956.61
Totals	0.00	+	0.00	+	0.00	+	1,411.07	+	353.29	=	1,764.36
<b><u>9/17/2007</u></b>	<b>EPA 05DA</b>		<b>EPA 05DD</b>		<b>EPA 05DE</b>		<b>EPA 05DF</b>		<b>EPA 05DG</b>		
ODW	0.00	+	7,730.33	+	326.83	+	0.00	+	9,895.66	=	17,952.82
DNREC	0.00	+	0.00	+	0.00	+	0.00	+	0.00	=	0.00
Totals	0.00	+	7,730.33	+	326.83	+	0.00	+	9,895.66	=	17,952.82
<b><u>10/18/2007</u></b>	<b>EPA 05DA</b>		<b>EPA 05DD</b>		<b>EPA 05DE</b>		<b>EPA 05DF</b>		<b>EPA 05DG</b>		
ODW	0.00	+	14,457.53	+	597.34	+	32,845.87	+	18,281.07	=	66,181.81
DNREC	0.00	+	0.00	+	0.00	+	151.00	+	0.00	=	151.00
Totals	0.00	+	14,457.53	+	597.34	+	32,996.87	+	18,281.07	=	66,332.81
<b><u>1/24/2008</u></b>	<b>EPA 05DA</b>		<b>EPA 05DD</b>		<b>EPA 05DE</b>		<b>EPA 05DF</b>		<b>EPA 05DG</b>		
ODW	0.00	+	61,850.51	+	2,614.64	+	112,587.32	+	84,838.35	=	261,890.82
DNREC	0.00	+	0.00	+	0.00	+	34,444.98	+	0.00	=	34,444.98
Totals	0.00	+	61,850.51	+	2,614.64	+	147,032.30	+	84,838.35	=	296,335.80
<b><u>3/20/2008</u></b>	<b>EPA 05DA</b>		<b>EPA 05DD</b>		<b>EPA 05DE</b>		<b>EPA 05DF</b>		<b>EPA 05DG</b>		
ODW	0.00	+	23,189.49	+	980.49	+	41,887.62	+	35,848.55	=	101,906.15
DNREC	0.00	+	0.00	+	0.00	+	20,432.68	+	0.00	=	20,432.68
Totals	0.00	+	23,189.49	+	980.49	+	62,320.30	+	35,848.55	=	122,338.83
<b><u>4/14/2008</u></b>	<b>EPA 05DA</b>		<b>EPA 05DD</b>		<b>EPA 05DE</b>		<b>EPA 05DF</b>		<b>EPA 05DG</b>		
ODW	0.00	+	22,505.05	+	0.00	+	144,746.77	+	61,324.68	=	228,576.50
DNREC	0.00	+	0.00	+	0.00	+	15,172.87	+	0.00	=	15,172.87
Totals	0.00	+	22,505.05	+	0.00	+	159,919.64	+	61,324.68	=	243,749.37
<b><u>6/16/2008</u></b>	<b>EPA 05DA</b>		<b>EPA 05DD</b>		<b>EPA 05DE</b>		<b>EPA 05DF</b>		<b>EPA 05DG</b>		
ODW	0.00	+	(254.01)	+	(386.24)	+	88,462.97	+	64,623.82	=	152,446.54
DNREC	0.00	+	42.92	+	0.00	+	53,619.74	+	27,524.97	=	81,187.63
Totals	0.00	+	(211.09)	+	(386.24)	+	142,082.71	+	92,148.79	=	233,634.17

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<u>6/25/2008</u>	EPA 05DA		EPA 05DD		EPA 05DE		EPA 05DF		EPA 05DG		
ODW	0.00	+	6,570.42	+	326.83	+	26,891.63	+	9,761.23	=	43,550.11
DNREC	0.00	+	375.41	+	0.00	+	7,586.43	+	4,458.90	=	12,420.74
Totals	<u>0.00</u>	+	<u>6,945.83</u>	+	<u>326.83</u>	+	<u>34,478.06</u>	+	<u>14,220.13</u>	=	<u>55,970.85</u>
<b><u>Combined</u></b>											
ODW	0.00	+	136,049.32	+	4,459.89	+	448,229.93	+	284,573.36	=	873,312.50
DNREC	0.00	+	418.33	+	0.00	+	132,011.02	+	32,337.16	=	164,766.51
Totals	<u>0.00</u>	+	<u>136,467.65</u>	+	<u>4,459.89</u>	+	<u>580,240.95</u>	+	<u>316,910.52</u>	=	<u>1,038,079.01</u>

**FS-993914-07**

	<b>Projects DPH/ODW 3001</b>		<b>4% Admin. DPH/ODW 3002 DNREC 0801</b>		<b>2% Tech. Assist. DPH/ODW 3003</b>		<b>10% Prog. Mgmt. DPH/ODW 3004 DNREC 0805</b>		<b>15% Local Assist. DPH/ODW 3006 DNREC 0806</b>		<b>Total Draw Amounts</b>
	<b>Amount</b>		<b>Amount</b>		<b>Amount</b>		<b>Amount</b>		<b>Amount</b>		
<b><u>4/14/2008</u></b>	<b>EPA 06DA</b>		<b>EPA 06DD</b>		<b>EPA 06DE</b>		<b>EPA 06DF</b>		<b>EPA 06DG</b>		
ODW	0.00	+	0.00	+	0.00	+	2,879.89	+	0.00	=	2,879.89
DNREC	0.00	+	0.00	+	0.00	+	0.00	+	0.00	=	0.00
Totals	<u>0.00</u>	+	<u>0.00</u>	+	<u>0.00</u>	+	<u>2,879.89</u>	+	<u>0.00</u>	=	<u>2,879.89</u>
<b><u>6/16/2008</u></b>	<b>EPA 06DA</b>		<b>EPA 06DD</b>		<b>EPA 06DE</b>		<b>EPA 06DF</b>		<b>EPA 06DG</b>		
ODW	0.00	+	0.00	+	0.00	+	977.89	+	20,362.24	=	21,340.13
DNREC	0.00	+	0.00	+	0.00	+	0.00	+	8,000.00	=	8,000.00
Totals	<u>0.00</u>	+	<u>0.00</u>	+	<u>0.00</u>	+	<u>977.89</u>	+	<u>28,362.24</u>	=	<u>29,340.13</u>
<b><u>6/25/2008</u></b>	<b>EPA 06DA</b>		<b>EPA 06DD</b>		<b>EPA 06DE</b>		<b>EPA 06DF</b>		<b>EPA 06DG</b>		
ODW	0.00	+	0.00	+	0.00	+	0.00	+	0.00	=	0.00
DNREC	0.00	+	0.00	+	0.00	+	19,625.00	+	0.00	=	19,625.00
Totals	<u>0.00</u>	+	<u>0.00</u>	+	<u>0.00</u>	+	<u>19,625.00</u>	+	<u>0.00</u>	=	<u>19,625.00</u>
<b><u>Combined</u></b>											
ODW	0.00	+	0.00	+	0.00	+	3,857.78	+	20,362.24	=	24,220.02
DNREC	0.00	+	0.00	+	0.00	+	19,625.00	+	8,000.00	=	27,625.00
Totals	<u>0.00</u>	+	<u>0.00</u>	+	<u>0.00</u>	+	<u>23,482.78</u>	+	<u>28,362.24</u>	=	<u>51,845.02</u>

## **APPENDIX F: Audit Reports**

For DWSRF financial statements, please contact:

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302-741-8585 or  
[Heather.Warren@state.de.us](mailto:Heather.Warren@state.de.us)